The Dental Digest.

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Original Contributions.

SUGGESTIONS ON DEVELOPING AND CONDUCTING A DENTAL PRACTICE ON BUSINESS PRINCIPLES.

By J. N. Crouse, D. D. S., Chicago.

[*Continued from page 69, No. 2, Vol. 1.*]

In our second article in the February number of the Digest we dwelt at length on methods of adjusting the dam, treating and preparing sensitive cavities, and emphasized the importance of lessening discomfort, and of inflicting as little pain as possible, in consideration of the patient and the operator.

Let us now take up the question of correct diagnosis and prognosis, which should have been treated before discussing the subjects in the last paper, but for the fact that in order to make a correct examination of most cases the dam has to be used. To determine how well the patient will endure the suffering is also so great an item that it was discussed first. In our estimation, the making of a correct diagnosis requires better judgment and more careful thought than any other duty a dentist has to perform. Long observation has convinced us that the great majority of failures in dental work are due to lack of skill in diagnosing and deciding what is best to be done, rather than to lack of skill in operating. Scores of men can fill a tooth when the plan of operating has been decided upon, where only an expert could decide upon the best plan to save the tooth for use under all the conditions. We emphasize this because we believe that it is a point too frequently overlooked as unimportant. Many things must enter into the calculations when determining the course to be pursued, the amount and location of the decay; the care the teeth are likely to receive after being put in order; the health of the patient, especially in regard to digestion; the age;

the power of endurance and willingness to submit to the necessary pain; and lastly, the ability and disposition to compensate the operator for services rendered.

These are among the important factors or questions which must be taken into consideration when deciding what shall be the plan of procedure. When called upon by new patients where the teeth are needing much attention, and especially in the case of children, we have found it a great advantage to close the cavities with cements without very thorough preparation of the cavities until we have had time and opportunity to study the conditions above named. When we can be reasonably sure of the care the teeth will receive after filling we know better what method to adopt, what material to use in the permanent operation. We next consider the following questions: Are the teeth up to the average in quality? Are there many cavities? Have they had average care or been neglected by the possessor? Are we going to be able to get the patient to be more careful to keep the teeth clean? We have already, while closing the cavities with temporary fillings, learned whether the patient is willing or not, with careful maneuvering on our part, to submit to the necesssary torture. We give now the first lecture and instructions on how to clean and take care of the teeth—a brush and a wash, and perhaps a powder are in the hands of the patient, and another appointment is made.

We have the next call very soon, and if an examination shows the teeth not to be well brushed, we repeat the first lecture. We are now sure there is but little use in filling this young person's teeth, unless they will have unusually good care. We are kind to the patient, but serious and firm, perhaps if need be a little disgusted, and close the examination with another appointment for the next day or very soon. If the next examination shows great improvement, we give an appointment for a sitting to fill one of the simpler cavities. On account of all the time taken this must be some days off, and perhaps it will be well to have another call from the patient just to see that during this time the teeth are getting better care each day. The second examination of our young patient may not show so great an improvement and we find we must give another lecture, this time with the aid of a mirror which fully exposes to the patient the filthy and neglected parts, then another appointment is made for the next day.

We invariably repeat these examinations and continue to insist upon better care of the teeth until a reasonable amount of diligence and skill is secured. We urge that until this interest on the part of the patient is secured, or until you know about what to expect in the matter of care of the teeth after filling, it is impossible to decide upon either method or material intelligently, as after-care is the greatest factor in the problem and hence must enter largely into the calculation. Every dentist knows how much of his best work is undone by neglect on the part of the patients of all ages, and even among those who are particular to the point of fastidiousness in other things. But the young operator says: "This education all takes time and doesn't pay rent." Charge for it, charge for every appointment; and if you succeed in educating your patient into a proper care of his teeth you have rendered him a greater service than by giving him any amount of skill you may possess in the way of operating. The day will come—is coming fast—when patients will pay physicians to keep them well, not to make them well; when patients will pay dentists to preserve their teeth, not to restore them. So let the first step in diagnosis be the education of your patient into hearty cooperation with you. Do it in your own way—you could not do it in any one else's if you tried, but do it without fail.

It is unfortunate that we cannot tell our patients that proper care given in season will always preserve them, but we are obliged to admit the fact that teeth will decay in some mouths despite all the care that can be given by patient and dentist, and from causes usually beyond the control of either, such as poor quality of teeth, poor digestion, ill health, etc. These facts are too often made the scapegoat for lack of skill and carelessness on the part of the operator, and much dishonesty escapes detection by attributing failure in work to these causes.

To build up a first-class permanent practice one should make it a rule to send every patient away satisfied that he has been justly dealt with, and this cannot be done by presenting a large bill, however just it may be, without previous consultation and preparation unless the patron has previously been educated in the matter of fees. We shall describe conditions under which it is best to use a variety of methods, and how we prepare the parent or guardian so as to insure proper compensation without unpleasantness when the work is finished, in our next article.

A METHOD FOR ADAPTING LOGAN CROWNS.

By Rodrigues Ottolengui, New York.

Logan crowns, for many reasons, are most valuable, yet they often fail. Two chief causes mainly contribute to such result. First, the approximating surfaces of crown and root are not accurately adapted the one to the other. At some point a space occurs, so large that there must be an excess of cement—which, eventually washing out, leaves a pocket for the retention of debris. Decay creeps in, and when the crown finally comes off the root is found to be too far destroyed for further salvation.

Second. An inflamed condition of the gums follows the placing of the crown. Where this proceeds to extremes, a suppurative stage ensues, which marks a pericementitis at first restricted to the vicinity of what was the neck of the tooth, but rapidly progressing towards the foraminal extremity, where it ends in alveolar abscess and loss of the root. The trouble is that the crown was not circumferentially adapted to the root, but by overlapping rested upon the gum tissue, producing irritation, absorption, a space for lodgment of food, and destruction of the soft tissue in consequence.

A plan which obviates these two difficulties should be welcomed by the profession. It is as follows:

The root and crown are prepared as usual with the best skill of the operator. Then take pure gold plate, 34 guage, and form a disk having a hole in center for the passage of the pin. Fig. 1.

This disk is softened by passing through the flame, and placed over the crown, the pin passing through the hole. Next the crown is placed into position and the disk thus forced against the end of the root. Fig. 2.

This will *approximately* mark on the disk the circumferential shape of the root end. The disk is now moved from the crown—the excess of metal trimmed away—and it is tried on the root from time to time (not on the crown,) until the circumferential shape of the disk and root end are identical. The disk may now have a shape like Fig. 3, especially if we are dealing with a bicuspid. If it be placed again on the crown—and pressed against the porcelain—the relative circumferential shape of the disk and the crown would appear as in Fig. 4, from which it is manifest that if the crown had been set as first prepared, the overlapping porcelain—

at a, a—would have extended beyond the edges of the root and have rested on the gum.

Gutta percha is now placed in the hollow part of the crown around the pins, and the disk is warmed and pressed to place, the gutta percha holding it there—while with small corundums in the engine the lateral excess of porcelain is ground away until the end of the crown coincides circumferentially with the disk—and consequently with the root end.

This accomplished, the crown is warmed until the gutta percha is slightly softened, and it is then placed in the root and quickly driven home with a few smart raps with a mallet. The gutta percha will be resistant enough to compel the soft gold disk to take im-

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

press from the root end, thus adapting itself accordingly. At the same time should there be a space anywhere the gutta percha will be forced through at that point and when removed it will indicate not only that the approximating surfaces are not yet coincident, but it will also point out exactly the connection needed to perfect the fit.

The disk and gutta percha are removed to allow grinding with a corundum, and this process is renewed until the fit is as accurate on approximating surfaces as it was made circumferentially.

The disk finally takes an accurate impression of the end of the root touching it, and it and the gutta percha are left in place when the crown is finally set. Thus we have a close joint, with a minimum of cement, and also accurate adaptation circumferentially. Set in this way, on healthy roots, Logan crowns are permanent fixtures—or as much so as anything in the mouth can be.

THREE DIFFICULTIES OF THE YOUNG PRACTITIONER.

J. E. Davis, B. S., D. D. S., Columbus, O.

Probably three of the most difficult things for the young practitioner to master are: Filling pulp canals, capping nerves, and overcoming extreme sensitiveness in filled teeth, where the filling extends close to the pulp of the tooth.

In filling pulp canals I have long since discarded all but the following method: Apply the rubber dam, cut away the tooth enough to have thorough access to each nerve canal, wipe out all moisture and foul matter, using peroxid of hydrogen, dry with hot air, then thoroughly saturate the canals with pure wood creosote, and again dry with hot air. Mix oxy-phosphate cement thin enough to flow, and if you are working on a lower tooth drop it into the tooth, and with a fine broach, working it up and down in the canals, you can easily work the cement to the apex of each canal, then fill balance of tooth as usual. If it is an upper tooth, tip the head well back and slide the cement from the spatula with the broach. A little practice will enable you to fill canals of upper teeth as well as those of lower. You need never look for trouble from a tooth treated in that way. Where there is no soreness or ulceration no preparatory treatment is necessary.

Capping nerves was once a great bugbear to me, now I think little of it. If the nerve is badly exposed and has been aching for a few days, years of experience have taught me that it is no use trying to save it alive, so I apply nerve paste and destroy, then fill pulp canals. But where there is but little inflammation and exposure, with but very little pain, or only accidental exposure from peeling off the layers of decay, I have found that it is safe to cap the nerve. Take a small ball burnisher, dip the ball into a saturated solution of nitrate of silver, and apply over the bottom of the cavity and pulp, being careful not to bring the silver too near the edges of the cavity, as it will discolor them, then dry the cavity with warm air. From the outer leaf of your gold foil book cut a small piece of paper just large enough to cover the bottom of the cavity, but not large enough to come close to the margins of cavity. Dip the paper into Gilbert's non-conductive tooth lining, lay over the exposed nerve, wipe out any surplus with cotton pellet, dry with warm air, use oxy-phosphate first, and finish filling with any kind of material

you wish. You may expect the tooth to be comfortable ever afterwards.

Every dentist has had patients come back soon after having teeth filled, and complain of the teeth being so sensitive that they cannot take anything cold or hot into the mouth, and the teeth seem to get worse rather than better. The usual course of pepper pads, etc., only puts them off for a day or two, when they return complaining more than ever. Where the teeth are very sensitive in excavating, or where the decay extends very close to the pulp, take a small ball burnisher as before described, dip into saturated solution of nitrate of silver, apply to bottom of cavity, and where the decay extends very close to pulp apply a little non-conductive tooth lining over bottom of cavity; use oxy-phosphate cement first, then the regular filling material. It works like a charm. I have removed fillings from over-sensitive teeth where the pain had become almost unbearable, applied nitrate of silver to cavity, refilled immediately, and had no further trouble with the teeth whatever.

EXTRACTING TEETH BY ELECTRICITY.

Trials have been made at London with a new apparatus for the extraction of teeth by electricity. It consists of an induction cell of extremely fine wire, having an interrupter that can vibrate at the rate of 450 times a second. The patient sits in the traditional armchair, and takes the negative electrode in his left hand and the positive in the right. At this moment the operator turns on a current whose intensity is gradually increased till it has attained the utmost limit the patient can support. The extractor is then put in circuit and fastened on the tooth, which, under the action of the vibration is loosened at once. The operation is performed very quickly, and the patient feels no other sensation than the pricking produced in the hands and forearms by the current.

AN EASY AND SAFE METHOD OF REMOVING PULP AFTER DEVITALIZATION

Take a watchmaker's pivot broach, known as the Swiss broach, anneal it, wind a few shreds of cotton around the end, push it into the pulp cavity and slowly twist it. As the cotton is wound around the broach, the pulp will cling to the cotton, and thus will be taken out whole, without the danger of breakage usually accompanying the use of barbed broaches. It is not necessary to carry the instrument to the end of the root, but some cotton should be forced ahead of the broach before twisting it. C.

A PROTEST.

By C. W. Stainton D.D.S., Buffalo, N. Y.

The recent acquirement by a Dental Manufacturing Co. of the Hollingsworth system for crown and bridge work, and the attention drawn to this fact and to the system itself by the advertisements in all the Dental journals and by a special pamphlet sent out in October, brings into much greater prominence than heretofore the excellences of the Hollingsworth system. These excellences are very pronounced and are fairly familiar to the dental public, so I need not enlarge on them here. But there is one feature of this system which cannot be commended.

Every member of our specialty, whose standard is sufficiently exalted to allow him to subscribe to the Code of Ethics of the American Dental Association, ought to be refined enough not to employ the system for the manufacture of gold centrals, laterals or cuspids, as described on page five of the October pamphlet.

The height of art is to conceal art. But this setting of metallic shells formed in imitation of the teeth in the front of the mouth where they invite attention by their foreign and artificial character is not art in any proper sense of the term. Instead of hiding the evidence of decay in the natural teeth, we call in most emphatic manner attention to that fact.

So great is the variety now of porcelain teeth—almost infinite in shape and color—that it is not difficult to place in the front part of the mouth a porcelain substitute so realistic as almost to defy detection by an expert. What right then—pecuniary, professional or moral—has any man to place in sight anything so pronouncedly artificial, or to attract attention when he should divert it. This advertising the loss of natural crowns instead of hiding it, is wrong.

It is no justification to claim that very many do it, including many of our best "operators," and that our patients like them. That is not a reason, and only a very poor excuse. If our patients have erroneous ideas as to what is in good taste, we ought to educate them to better ideas. It certainly is part of our duty to educate our patients and to educate them along right lines.

No man has the right, whether prompted by his own cupidity or the vanity of his patient, to place a gold shell in any mouth where it will show. In the superior arch of a lady's mouth a gold

shell anterior to the molars ought properly to make a man liable to an action for malpractice. In a gentleman's mouth curtained by a heavy mustache the rule need not be so pronounced.

It is an unpleasant fact that the manufacture of gold shells for the incisors and cuspids and their sale at the dental depots seems to be on the increase. It is a long step backward in dental taste and decency, and the time is not far distant when we shall realize this fact. This is one of the technicalties in dentistry like copper amalgam, which will soon recede leaving its train of disgusted patients and operators to regret that they ever felt its influence. Many men who would not under any condition put amalgam fillings in front teeth are putting on these crowns, although they are as objectionable. When we practice dentistry, let it be on a higher plane of taste than that shown by native Indians or negroes, who display beads, silver and gold, from ear and lip, and fancy themselves beautiful. We ought to frown on this whole gilded pretence of substitution.

There is no justification of any proper sort, for these shining, brassy disfigurements glistening from the mouth of our duped patients. When they ask for teeth, let us give them teeth and not hang up a gilded memorial tablet to commemorate the loss of their predecessors, the natural organs.

"SILVER" FOR ROOT FILLING.

In the December number of the *Dominion Dental Journal* there is an article by Mark G. McEllimney on "Pulp canal filling," wherein he recommends "silver" as a permanent root filling, which he considers an ideal filling, as absolute dryness is not necessary whilst introducing it.

By silver it is supposed he means amalgam, and *that* will be found very difficult to carry to the end of a torturous root canal. In a number of experiments made with teeth implanted in plaster of paris (a cuspid, bicuspid and molar) where the canals were very much easier of access than in the mouth, it was impossible to fill one root perfectly, as the amalgam, not being a material that would flow, had to be put into every little space, which is almost an impossibility, owing to the inaccessibility of the part and the want of cohesion of the material. The author may have acquired an expertness in manipulating amalgam for root filling, which will carry him beyond the probability of failure, but it seems on general principles, combined with the experiments made, that the plan recommended is very likely to bring a number of "chickens home to roost," that will require a lot of disposing.

L. N. SEYMOUR

RALPH'S FIRST DENTISTRY.

DR. I. P. WILSON, BURLINGTON, IOWA.

One of my neighbors has a Maltese kitten which used to be subject to the most violent fits. At such times its eyes would look like balls of fire, and in the most frantic manner it would spring into the air and against the window panes, sometimes breaking the glass and terrorizing the whole family. The mother would jump on to a chair, the children look frightened, and the father gravely remark that "The blamed cat ought to be killed." After these demonstrations the kitten would fall to the floor and lie for some time in an unconscious condition.

One day the mother said to her son, "Ralph, that kitten acts very much as some babies do while teething." This made Ralph think that his feline pet needed the services of a dentist, and as he expects some day to be a dentist himself, he commenced at once to investigate the condition of the animal's teeth. He found the gums red, and two or three of the teeth loose, which he proceeded at once to extract.

For weeks previous to this time these fits were of almost daily occurrence, but since the operation, which was over a year ago, there has not been a single recurrence of the spasms.

Some years ago a favorite dog of mine had been moping around for several days, and it occurred to me that possibly his teeth were aching. On examination I found one of the teeth loose, the gums swollen, and every indication of the formation of an abscess. When I took a pair of forceps and extracted the tooth, the grateful animal ran around wagging his tail, and expressing, as best he could, his gratitude for the service I had rendered him.

There can be no doubt that lower animals suffer many of the ailments supposed to be peculiar to human beings, and possibly the very common difficulty, especially with Maltese kittens, of having fits, and often dying from them, may arise from dental irritation.

Military Duty and the Professions.—The *Christian Register* says: "Dr. Baxter, examining surgeon during the civil war, in tabulating the results of his examinations, shows that out of every 1,000 clergymen examined, 954 were unfit for military duty; out of every 1,000 journalists, 740; of physicians, 670; of lawyers, 544; while of farmers, only 350 were thus disqualified."

Digests.

Transactions of the World's Columbian Dental Congress.

Paper by Dr. W. D. Miller, Berlin, Germany, "Concerning various methods advocated for obviating the necessity of extracting devitalized tooth pulps."

The essayist thinks that the common practice of removing pulps and filling canals in incisors and cuspids is so easily carried out and so certain in results that no better method is likely to be found, but says that it would be "a great boon if some means or method could be devised which would render the tiring, expensive and sometimes impossible task of removing the pulp and filling the root canals of molars unnecessary."

He then reviews the theories of Witzel, Herbst and Bodecker, who have advocated the practice of removing the coronal portion of the pulp after the application of arsenic or cobalt, and leaving the pulp stumps *in situ* in the canals with the idea that their vitality is maintained under these circumstances, and also the theory of Baume, who recognized that "it is useless to attempt to retain vitality in the pulp after the application of arsenic," but who believed that the stumps could be "pickled" so as to remain inert.

Dr. Miller thinks that the solution of the problem lies not in the attempt to retain vitality in the root-stumps, but to so impregnate them with an antiseptic that they will not decompose.

He then says:

"The qualities desirable in a substance which is to be employed for the purpose in question appear to me to be the following:

"1st. It must be a strong antiseptic.

"2d. It must be sufficiently soluble and diffusible to guarantee the impregnation of the whole pulp.

"3d. It must not be so diffusible that it will be completely taken up by the surrounding tissue and finally disappear altogether, as is the case with applications of carbolic acid. It is my impression that there is greater danger in too great solubility than in insolubility.

"4th. A coagulating action upon the tissue of the pulp appears to me to be desirable, though it may not be absolutely essential. A pulp which is coagulated into a hard, insoluble body, is less likely to furnish nourishment for bacteria, and less likely to offer irritation to the periapical tissue than one in a soft or semi-liquid condition. I am inclined to think that one cause of the failure of Baume's borax treatment is in the fact that the pulp becomes crowded into a liquid or semi-liquid soapy mass, with a strong alkaline smell and reaction, which I hardly think can be indifferent to the tissue about the apical foramen.

"5th. It is desirable that the substances employed have no irritating action upon the pericementum, either at the time of application or subsequently.

"6th. It should not discolor the tooth, although, as the treatment concerns chiefly molars, a slight discoloration need not be considered as a very serious matter.

"7th. Solid substances are better adapted to the purpose than liquids.

"We shall see that it is about as difficult to find a substance which fulfills all the above-mentioned conditions, as it is to find one that fulfills all the requisites of a perfect filling material."

After experimentation with various antiseptics he was induced to use, more than any other, tablets made of

Sublimate .....0.0075 grams.
Thymol .....0.0075 "

The method of using was to completely devitalize the pulp, open up the chamber, clean it, and apply the tablet, crushing it with an amalgam burnisher. Then moisten with water and cover with a layer of gold foil and fill immediately with amalgam or cement. While statistics would seem to favor this practice the essayist truly says that time is the only test, and that five or ten years will be required for a definite conclusion. Few cases should be experimented with for the first year or two, and then only such as would otherwise be lost.

In the discussion of this paper Dr. Abbott, of New York, said that there was only one condition that ever presented itself where he considered it necessary to apply a devitalizing agent, and that was where he could not stop pain. He had used arsenic perhaps three or four times in the last fifteen years. When he encounters

pulpless teeth he opens them up and cleanses thoroughly with a 1:10000 solution of bichloride of mercury. Then he fills the canals with oxychloride of zinc in which is placed a drop of bichloride of mercury 1:2000. He always fills the canals at the same sitting unless there is a sensitiveness of the tooth on pressure. After filling, the gum is painted with a solution of concentrated tincture of aconite root and tincture of iodine.

Dr. George Cunningham, of Cambridge, England, said he had treated a limited number of cases according to Dr. Miller's plan and had been quite successful, but admitted that there must necessarily follow a certain percentage of failures. He felt it would be of great advantage to poor people if our treatment could be shortened.

"Among the Ancient Hawaiians," By Dr. J. M. Whitney, Honolulu, H. I.

[This paper deals with a subject of so much importance to the profession, and presents such an array of facts which tend to controvert popular opinion; and it is withal so tersely written, so interesting and devoid of verbiage, that in order to give an adequate idea of its contents it is deemed necessary to print it in full.—Ed.]

"To the thoughtful and conscientious dental student and practitioner there must certainly arise questions to which he may look in vain for satisfactory answers in his common surroundings. He sees the ravages of dental caries and other diseases so almost universal in our day, and he asks: Is this a necessary evil to which all mankind is subject, or is it the result of artificial life and varied foods to which our modern civilization binds us? Is dental irregularity due, as some claim, to the mixture of races, and if we could find a people, homogeneous and simple, would these conditions exist? Is it true that, as mankind advances in the stage of being, the third molar is to become gradually eliminated? What is the normal position of adjacent teeth in relation to each other? What relation has the kind of food we use to the building up of dental structure?

We all know the difficulty, amid the complications of modern hygienic conditions, of answering these important questions to our own satisfaction. But if we can examine the dental organs of a simple and isolated people not affected by the vices and diseases, which are surely not a necessary contingent of civilization,

but which are sure to follow in its train, we may draw some conclusions which will throw much light on our problems. It would be difficult indeed for most of us to find living subjects in any number meeting these requirements. But fortunately the bony structures are preserved long after the owners of them have passed beyond mortal ken, and if we can obtain the crania, especially, of people who lived upon the earth ages ago, when wants were few and means of supplying them were correspondingly limited, our study of their dental conditions will certainly be interesting and ought to be instructive.

I consider myself especially fortunate in living in a land where both of these requirements are met. First, the native Hawaiian people, until within a hundred years, lived isolated and unknown to the great world, therefore their habits are simple and their wants and opportunities were few. Second, their modes of burial were such that it is possible with comparative ease to obtain some knowledge of their primitive conditions.

"The most isolated place on the globe," that is what Professor Alexander, the learned historian and ethnologist, says of the Hawaiian Islands. Two thousand miles from the Pacific coast of America, equally distant from the Micronesian, Samoan and Tahitian groups, the nearest inhabited islands, and more than twice as far from the east coast of China and Australia, they occupy a unique position on the map of the world.

About the year 500 of the Christian era, a boatload of men and women drifted to those shores either from the Malay archipelago or from one of the southern islands which had previously been settled by Malays. Except a short period of intercourse between the Pacific islands in the eleventh and twelfth centuries, those islands were scarcely known to the world until their discovery by Captain Cook about a hundred years ago. Even the slight intercourse that may have existed during these twelve centuries must have been among kindred races on the Tahitian and Marquesan Islands, so that practically this people (until within a hundred years) had not changed their race characteristics nor their habits of life during the 1,200 years of their existence. Fortunately enough of their history and customs have been preserved to give us a good idea of many of their characteristics, their food, etc. They were of medium height, rarely reaching six feet, with

heavy, strong bones, their crania large and thick. Their employments were tilling the soil, fishing and warring. Their games were hurling the spear, riding the surf, board-boxing, wrestling and other exercises, requiring great bodily strength and courage.

The climate at the seashore averages 75°, with slight variation from day to day, not varying more than 30° during the year, while, as one ascends the lofty mountains with which the country abounds, any climate may be found to one of perpetual snow. Thus excessive heat is never found and vigor of body can be maintained. In the former days of which we have been speaking such diseases as typhus, typhoid, malarial and scarlet fevers, whooping cough, measles, mumps, small pox, syphilis and leprosy were unknown. Disease of the alimentary canal and of the lungs were the most prevalent troubles.

Their animal food consisted mainly of fish, with which the sea abounds. Domestic fowls were common, with dogs and swine, both of which were choice articles of food. Of vegetable foods the principal then as now was the *taro* (*colocasia antiquorum*), which is the Hawaiian "staff of life." From it is made the *poi*, an acid paste, without which a meal is never quite satisfying. They also had yams, sweet potatoes and sugar-cane. Their common fruits were cocoanuts, bananas, bread fruit, (when cooked resembling sweet potato), and *ohia* or mountain apple. Their habits of eating were most irregular, often neglecting to supply themselves with food for several days and then gorging themselves at any hour of the day or night.

With the incoming of civilization, of course many of these conditions have changed. Though *poi* and fish are still the favorite articles of food of the native people, they have added to these many acid and sub-acid vegetables and fruits, with meat, fine flour, etc.

The second peculiarity of this people, rendering a knowledge of their early physical conditions possible, is their modes of burying their dead. The most ancient and favorite of these places of interment were in the old lava caves with which the island of Hawaii particularly abounds. A lava stream flowing from some opening on the mountain side would cool first on the surface, leaving the still flowing lava within to empty itself on the country below, and thus a long irregular cave of varying dimensions would

be formed. Many of these open from mountain sides and often from apparently inaccessible precipices. The ancient Hawaiians were very superstitious; the ghost of the dead was supposed to haunt the body long after death, and the friends of the dead anxiously sought the most remote and inaccessible places for depositing their bodies. The islands were teeming with people, and some of these caves are piled many feet deep with the bones of the ancient dead. No wind nor moisture ever reaches them, and the bones are as perfectly preserved as in our most carefully kept cabinets, after probably hundreds of years since their interment. But the natives even now guard the burying places of their ancestors with most jealous care, and it is not easy even to one familiar with them and their language to obtain access to these ancient sepulchres.

The other mode of burial to which I referred, and which I consider to be much more recent than that of the caves, was in the sand of the seashore. Until within a comparatively few years, specimens of crania and other bones from these burying grounds could be obtained readily in many places. Six or eight miles from Honolulu there was such a place twenty years ago, where for several miles on the seashore these human remains lay bleaching in hundreds under the tropical sun, until they had attained the color and texture of ivory. I have seen several similar places on the island of *Oahu* and on *Kauai* particularly, but they have ceased to exist. In some places the grass has grown completely over the sand mounds, and cattle pasture over whatever bones may remain buried beneath. In others the native people, jealous of their removal, have taken care to break and demolish the skulls, thus rendering them useless. And the South Sea Island laborers have sought everywhere for the skulls and removed the teeth for the purpose of making necklaces of them, of which they are very fond.

Realizing more the value of these ancient remains now that they are so difficult to obtain, I recently spent a week on a journey to the island of Hawaii for the purpose of visiting some of these lava caves, and securing, if possible, some of their treasures. I was fortunate in being able to obtain the assistance of a friend, whose knowledge of the native people and their language made him especially valuable, and I may say indispensable to my suc-

cess. A voyage of perhaps 200 miles from Honolulu brought us to the vicinity of the caves. Providing ourselves with candles, stout cord, etc., we at once engaged the service of an old native, who claimed to know all about the object of our search, and spent the first day in a vain endeavor to find the ancient cave. Whether the native knew less than he had professed, or whether at the last his courage failed, and he feared the result of guiding us aright, we did not know, but we suspected the latter reason was the true one.

The next day we secured two guides, and after riding many miles over rough, lava-covered land, we reached a spot which the guides pointed to as the entrance to a burial cave. It was near the seashore, far from any human dwelling, and from any place that could support a habitation. We could not believe at first that an opening could exist there large enough to admit a man's body. But with much labor we succeeded in removing the rocks so that by considerable effort we were able to force ourselves through. Leaving our unwilling guides at the entrance, we fastened a cord securely to the opening of the cave, lighted our candles, and proceeded to work our way down. Descending among the rocks until we were at least fifty feet below the surface, we suddenly entered a large room, perhaps forty feet high. There were no bodies here, but opening from this room on several sides there were low, narrow passages. Entering one of these, we followed it for perhaps a quarter of a mile. Part of the way we were obliged to crawl with great difficulty through the narrow tunnel. We were suddenly rewarded by again finding ourselves in a large room, and surrounded on every side by the objects of our search, Near the entrance some of the bodies lay as if hastily deposited. but most of them were laid away with care, some upon shelves partly made with sticks laid on the rock at the side of the cave, *more* in an opening at the side, which the remains of a stone wall showed to have been at some time walled off from the rest of the cave, while the dim light of our candles showed us several openings in different directions, which doubtless led to other similar burial caves. The knees were usually drawn up to the breast, tied with a cord, and the whole wrapped in many folds of the native cloth or *tapa*. By the side of each had apparently been left some food, and perhaps his fish-hook or spear, that he might not want

for food in his future home. The air being very dry, and perhaps having some antiseptic property, many of the bodies were completely mummified. Deep dust lay upon everything, and the stillness of death was over all. We could easily imagine with what awe the friends of those lying here had crept down at night and laid away their dead, for the greatest secrecy must be observed, so that no one could ever find them. "I do not wish," said a dying chief, "that my bones should be made into arrows to shoot mice with, or into fish-hooks."

We secured as many specimens of *crania* only as we were able to carry, packing them in bags. It was growing dark when we emerged from the cave, and when our natives who were waiting outside saw our bags of bones and realized that they must help us to carry them home, they were in utter consternation. It was with difficulty that they could be persuaded to place them upon their horses, and then, regardless of us, of road or path, they took the shortest way home as fast as their horses could carry them, not daring to look behind lest they should see the pursuing ghosts of their ancestors; leaving us to pick our way as best we could over the rocks in the dark, without even a path, the eight or ten miles to our lodging place.

We have been taught that primitive peoples, living in simple conditions, were in a great measure free from dental caries as we see it in the mouth of our patients, and that many of the forms of dental disease with which we have to contend, were with them wholly unknown. This seems to me a mistaken teaching as far as may be learned from these records. An exceptional opportunity of becoming acquainted with the crania of the ancient people of those islands during the twenty-four years of my residence there, has convinced me that both in the case of those buried in the caves, and of those more recent in the sand, not more than 25 per cent have been free from caries, irregularity or disease. Indeed, I think I have discovered every form of dental disease known to our practice; dental caries in all its many types, necrosis of the teeth, erosion, alveolar abscess, pyorrhœa alveolaris, disease of the antrum of Highmore, necrosis of maxillary, anchylosis of the jaw, salivary calculus, etc. Here was a well developed osseous system; the individual was trained to exercise of the kind that would develop every part of the structure, living upon an

abundance of the simplest yet the most nutritious and bone developing of foods that would not cling to the teeth, but would exercise and clean them, with not an element lacking required by our present knowledge, and yet the same dental diseases which we suffer burdened the lives of the ancient Hawaiians.

While this is true, I have been interested to find that the teeth of those who died before civilization had introduced to the people peculiar constitutional diseases, acid fruits and vegetables, fine flour and varied foods, were much less seriously attacked by disease than afterwards. As a general statement the teeth would be found clean, and when caries existed it was here and there in teeth of both maxillæ and on both sides, but not so pervading as found in the more recent crania, or in the mouths especially of the young of the present time.

We have often accounted for the irregularity of teeth found so common among Americans, by the mixture of races of which our nation is composed. We say that the wide teeth of the large jaw of one race, being crowded into the narrow jaw of another race with which it has mingled would of necessity produce an irregular arch. But here is a people, isolated from all others for at least 1400 years, with no admixture of races; yet irregularity of the teeth of both maxillæ was almost as common as it is among the mixed races of today. It would be difficult to give a good reason why a fixed type for the mouth of this people should not have existed a thousand years ago, and that all, with rare exceptions, should have been modeled from it, had nature designed that there should be absolute uniformity in her work.

Among the crania I have examined I have noticed what seemed to be somewhat fixed as a type, that the teeth are set closely together and well rounded, and that the dense part of the enamel, near the cutting edge or grinding surface, strikes its fellow at that point, the whole being held firmly together by the buttressed third molar.

Perhaps next to dental caries, the greatest source of oral disorders among these people was the irregularity of the third molar, often producing in them as serious consequences as with us of the present time, while its failure to erupt was nearly or quite as common as we find it in our daily practice. So that we cannot argue from these remains, at least, that the coming man is to be deprived of this useful organ.

The relation of food and disease to the health of the dental organs is strongly brought out as we study the changes shown in the teeth of those buried in the oldest caves, and so down through the more recent burials in the sand; then of those who were the old people a quarter of a century ago, whose childhood was passed before civilization had touched their life habits, and their grandchildren who are now in our schools. These children, as shown by actual examination, have but little better teeth than their white school-fellows. Their fathers and mothers may have better teeth than the children, but it would be an exception if *they* had not been to the government physician and had one or more teeth removed for relief from odontalgia, while the grand-parents, the old men and women whom I found when I first went to the islands, had teeth approximating those found in the old caves, though not as good.

I lay much of this very great change of the many forms of disease that have weakened their constitution, to fine flour that has become a part of their diet, and eaten in the form of crackers or hard bread clings to the teeth, to the many acid fruits, such as tamarinds, guavas, limes, etc., to which they have constant access, and to spending their childhood and youth in the schoolroom instead of wading and swimming in the warm sea, eating raw the fish and shell fish which they have caught, chewing sugar-cane and stripping off with their teeth the fibrous covering of the cocoanut."

Discussion. — Dr. C. N. Pierce, of Philadelphia, raised the question as to how much the degeneration in teeth and the development of brain structure exhibited in these skulls is due to the recognized isolation of the race. The absence of the third molar in many of the skulls shown proves that the modification in number and structure of the teeth dates back to these people, and anthropologists tell us that two hundred thousand years is not too long to look for changes of this nature. We have one peculiarity here that we do not find at the present day—the large jaw with ample space but no third molar. The skulls dating back 500 or 700 years have a heavy jaw and wide ramus—far in excess of those found to day. Another peculiarity in ancient skulls is the tendency toward redevelopment of the process to take the place of lost teeth. In one case here " where the upper bicuspid

and cuspid and first molar had been lost, the lower jaw has retained the teeth and the friction in mastication of the lower teeth upon the upper process has developed a sharp incisive process." This to a certain extent has taken place of the teeth. In modern jaws the general extraction of the teeth and insertion of plates by dentists prevents this. The presence of dental diseases indicated by these skulls shows that they existed then as they do today.

The International Dental Journal for February, 1895.

In a paper read before the Central Dental Association of northern New Jersey, Albert E. Woolf, of New York has the following to say of "the electrical disinfectant," called Electrozone. Electrozone is prepared by passing a current of electricity through sea-water, thus electrizing it. In sea-water are to be found chloride of sodium, chloride of magnesium, and chloride of potassium, also some bromides and iodides. In passing an electric current through the solution, the chloride of sodium is decomposed thus—chlorine and oxygen are liberated at the positive pole—the base sodium being being deposited at the negative, the hydrogen escaping. Chlorine and oxygen enter into the combination of the base and form hypochlorite. The same being the case with the magnesium and potassium. Thus the hypochlorite of sodium, of potassium, and of magnesium are produced by the decomposition of sea-water with electricity. Experiments were made with bichloride of mercury, carbolic acid, and sulphurous acid, with the result that they were found to be non-germicides, particularly in the case of spore-germs, and only rendering them inactive for the time being, while the electrical disinfectant decomposed them entirely. Experiments made by bacteriologists show the destruction of germ life by electrozone to be almost instantaneous; while, with the other so-called disinfectants some time is necessary to render them even inactive. It is no longer a disputed question as to whether ozone is found by the decomposition of electrozone in presence of organic matter. Hyperchlorites in contact with an organic body are split up; the chlorine, because of its affinity for hydrogen, will unite with that element in the organic body, liberating therefrom one atom of oxygen. It also unites with the hydrogen of the moisture surrounding the body, liberating another atom of oxygen, and one atom is liber

ated from the hyperchlorite. Thus three atoms of nascent oxygen are liberated which is ozone. Ozone is acknowledged to be as powerful an oxidizer as any discovered. The motion of germs under the microscope ceases instantly when brought in contact with electrozone, because the organic matter has been deprived of one of its elements. This is followed by the oxidizing action which results in destruction of life and disintegration of the germ. I know of no other disinfectant whose action on germs is similar to this. The first use of the electrical disinfectant on a large scale was the disinfection of the sewage of Brewster's, New York. It had been dumped on a marshy flat, and from the action of the sun had caused much sickness; diphtheria, typhoid fever, typhoid malaria, scarlet fever, and kindred diseases were prevalent. A plant was erected and the sewage treated, and from subsequent tests was found to be entirely innocuous. The effluent which ran into the drinking water of New York was entirely free from contamination. A test of the sewage was made with iodide of potassium paper which was turned black, showing a surplus of gases over what were necessary to sterilize it. It was also used for the disinfection of the fermenting garbage of New York on Riker's Island, with equally good results. Electrozone is non-poisonous and may be swallowed in comparatively large quantities without causing any bad effects. In cases of odontalgia, the application of specially prepared electrozone will stop the pain, no matter how severe it may be. If one would rinse the mouth night and morning with it, all germs that reach the teeth would be killed. It has been successfully used in the treatment of cases of carbuncles, typhoid fever, diphtheria, cancer, eczema, tuberculosis of the rectum, ulcer; and consumptives have been much benefited —the expectoration being largely reduced.

An article by F. T. Van Woert, M. D. S., of Brooklyn, on '*Sulphuric Acid and Peroxide of Sodium in the Treatment of Pulpless Teeth*,' in the use of which he agrees with Dr. Callahan, as is stated in the article. He says:

"Sulphuric acid is very valuable in bringing to light nerve-canals that would never be found were it not for its use. The loss of many valuable teeth is caused by the failure of opening and sterilizing roots, which in some cases is utterly impossible, but we claim that by the use of the following treatment many hopeless

cases are mastered and hundreds of teeth saved which would otherwise be lost." A supposed case—a lower molar in which the pulp has been destroyed: Adjust the rubber dam and open the pulp chamber freely. Take a discarded broach, bent at nearly right angles, wind a little cotton about it tightly, with this place a drop or two of the acid solution upon the dead pulp. This by dehydration will toughen the pulp so it is easily removed. Now place a drop of the solution over the entrance to each canal, and with a No. 5 Donaldson nerve-canal cleaner enter the canal carefully with a pumping motion; the acid will follow closely and destroy all septic matter. Continue this process until a slight sensation at the apex of the root is experienced by the patient. Treat all the canals in the same manner. With a drop syringe fill the cavity with a saturated solution of bicarbonate of soda; this in contact with the acid, liberates carbonic acid gas in such quantity that the effervescence carries the debris out of the canals and cavity onto the rubber dam. Cleanse the canal with sterilized water, alcohol or peroxide, which leaves them white and clean. By using more acid and a coarser broach, the canals may be enlarged. Dry thoroughly with paper points, alcohol, hot air, etc., which processes leave them thoroughly opened, perfectly clean and aseptic; and they may be further treated or filled as desired. If unsuccessful in cleansing the canals by this means, treat them with a saturated solution of sodium peroxide and seal for twenty-four to forty-eight hours, when they may be washed, dried, and filled.

To make a stable saturated solution of sodium peroxide, take a tumbler half full of distilled water, place in a large dish, and pour all the water around it possible without floating the glass. Add the sodium peroxide, finely powdered, in small quantities, about as much as can be held on the large blade of a pocket knife, sifting the powder on the water. This amount should not be added oftener than every half hour. Continue this until the solution begins to look opaque. After standing over night it is ready for use. This solution will not disintegrate tooth substance, and may be kept in a glass stoppered bottle, in a cool place for a long time. The use of sulphuric acid thus is void of danger for the following reasons: 1. Because the action of the acid is self-limiting on dentine. 2. It is a pronounced germ-

icide. 3. The acid acts upon diseased tissue with far greater vigor than on healthy. 4. The destroying of the diseased tissue in this way leaves a fresh aseptic surface. 5. An aseptic wound will heal itself in any part of the body if properly closed."

In *'A Note on Hydrogen Dioxide as Furnished to Practicing Dentists'*, read before the Odontological Society of Penn., Henry Leffmann, M. D., D. D. S., says: "While there are several excellent brands of hydrogen dioxide in the market, there are also many poor ones. The reputation of a house is no guarantee, nor is the price. Two samples from Merck's contained almost no dioxide. A sample which claimed as a special merit the small amount of fixed solids showed the highest in the list. Recently my attention has been called to an English brand much in favor with some physicians. I obtained a fresh sample (four ounce bottle, retailing at one dollar), and found it to be of poor quality. Hydrogen dioxide solution should be a clear fluid containing sufficient amount of the dioxide to give ten volumes of oxygen when completely decomposed. Fifty cubic centimetres of it should not require more than about five cubic centimetres of decinormal sodium hydroxide to neutralize the acid present. It should keep well in a moderately cool place. On opening a fresh sample no distinct explosion should occur, and when poured into a beaker, very little effervescence shold be noted. The assay for volume strength is made by means of a solution of potassium permanganate, which will last a long while, and but one cubic centimetre of a given sample of hydrogen dioxide is required for the test. A ten volume solution of excellent keeping quality is made by the Oakland Chemical Company, and may be obtained at about sixty cents a pint. Such a solution will keep in an office for weeks without appreciable loss if a little care be taken not to place it in a warm place.

"I give the following figures as to hydrogen dioxide solution sold to dentists:"

TESTS ABOUT FEBRUARY 16, 1894.

	Volumes.
Prescription from A. Robbin's drug store, Eleventh and Race streets,	10.9
Prescription from drug store at Frankford and Girard avenues.....	10.9
One-ounce bottle, S. S. White Dental Manufacturing Company.....	5.1
One-ounce bottle, S. S. White Dental Manufacturing Company, second sample	5.4
One-ounce bottle, G. Sibley.....	0.5
One-ounce bottle, H. D. Justi.....	1.4

RECENT TESTS.

	Volumes.
One-ounce bottle, S. S. White Dental Company, first sample, November 10	5.04
One-ounce bottle, S. S. White Dental Company, second sample, October 30	5.3
One-ounce bottle, H. D. Justi, first sample, November 10	.56
One-ounce bottle H. D. Justi, second sample, November 10	.56
Sample of Marchand's purchased at G. Sibley's October 30	12.04
Samples of McKesson & Robbin's hydrozone, at least six months old, kept in photographic dark room, and opened today, November 10, no internal pressure, contains	9.1
Samples of McKesson & Robbin's pyrozone that has been standing in laboratory for at least six months, opened occasionally, showed	9.1
Pyrozone, when fresh, contains almost exactly	10.

In a paper on '*The Correction of Injury Resulting from Extraction*,' read before the New York Odontological Society, by S. E. Davenport, D. D. S., M. D. S., he says; "No inflexible rules can be given governing either the choice of filling material or methods for the correction of irregularities, but the decision must be based upon existing circumstances and conditions. A prominent dentist advised the extraction of the sixth year molars, for the correction of three over-crowded mouths, differing much in typical characteristics, adding that he saw but few crowded arches which similar treatment would not correct." The extraction of teeth for the purpose of regulation should never be done without first taking casts, so that the relations existing between the lingual and palatal surfaces of the teeth may be observed, and by studying these casts, the dentist may learn many principles, and obtain a greater knowledge of nature's laws, which would cause him to be less frequently a murderer of the dental organs. In extraction of these sixth-year molars, mastication is often interfered with, thus causing dyspepsia. A case is given where a young man had been deprived of three teeth in order to correct an irregularity, thus leaving no points of contact other than the occlusion of the wisdom-teeth, and of the central and lateral incisors. The imperfect mastication had brought on nervous dyspepsia, when I saw him five years later, and as the wisdom teeth were fully erupted, there was no hope that either growth or development would ever cause such occlusion of the bicuspids and twelfth-year molars as would enable him to properly masticate. So, after expanding the upper arch slightly in the twelfth-year molar and second bicuspid

region, for the purpose of bringing about a better relation between the upper and lower teeth, it was decided to build up largely with gold the lower twelfth-year molars, and to build down the four upper bicuspids and the upper twelfth-year molars. The result was so satisfactory that almost immediately the habit of masticating with the front teeth became a thing of the past, and the remedies administered by a noted specialist became so efficacious that the dyspepsia was cured."

The Dental Cosmos for February, 1895.

"Popular Dental Education and the Newspaper," by J. C. Walton, D. D. S., Howell, Mich. This article is a plea for a better understanding of dentistry and its necessity by the public. The writer says, "There are millions of teeth being sacrificed because the masses do not know the possibilities of our art, while at the same time there are many of us impatiently sitting in our offices waiting for an opportunity to sell our services to those who need them. With a lack and a want of dental service on the one hand, and a lack and a want of employment on the other, matters are left to balance themselves somehow." He shows that much harm to the professional credit has been done in the past and is still being done by quacks and ignorant dentists, but that every self-respecting dentist should feel it his duty to correct it. He closes with a recommendation of the newspaper, under an editor created by each state society to select the matter sent in, as the best medium for the enlightenment of the public.

"Abscess of the Antrum of Highmore," by E. S. Hodgskin, M. D., Brooklyn. The writer says that abscess of the antrum is not common, and in nearly all cases comes from the teeth. The first symptom will be deep-seated pain, and swelling of the soft parts. On percussion there will be dullness and tenderness on the inflamed sides, accompanied by the temperature and depression associated with the formation of pus. In acute cases caused by a carious tooth, one tooth will be found, which when struck gives a duller sound than the others, and this tooth will be altered in color. Before pus has formed, it may be aborted by cold and local extraction of blood. The later treatment consists of drainage and antiseptic douches. Rubber tubing is the best for a drain, and peroxide of hydrogen for an antiseptic. The article closes

with a warning to keep the hands and instruments in an antiseptic condition, and not to continue the abortive treatment too long. Nearly all who took part in the discussion which followed agreed with Dr. Hodgskin's views, but a few took exception to the use of peroxide of hydrogen, full strength, as an antiseptic.

"Dental Therapeutics," by A. Ashley Faught, D. D. S., Philadelphia. Dr. Faught says that one-fourth of the dental literature of today concerns medicaments and their application to dental diseases, in contrast to one-thirteenth twenty years ago. That instead of prescribing drugs to repair a broken constitution, it would be better to guard against the break before it comes. An ounce of prevention, etc. That "tranquility of nerve" depends not only on a correct diet, but also on proper assimilation and elimination. As a solvent for uric-acid, a great disturbing element, he prefers ammonia salicylate to lithia carbonate, so often prescribed by physicians. For the other disturbing element, torpidity of the liver and resultant constipation, he prescribes a teaspoonful of cascara sagrada daily, and three or four glasses of water a day more than is customary. In the discussion following the paper was criticised as bearing too much on the field of the physician.

"Legal Restriction of Nostrums," editorial. The author of this commends the movement for the legislative prohibition of the use of nostrums in extracting or filling teeth. He says that since so many deaths have been and are almost daily reported from the use of cocaine preparations, it shows that if there is such a narrow margin of safety in the use of cocaine in accurately known doses, the use of a nostrum containing cocaine in an unknown quantity is almost criminal. Also, that the plea that the ethical dentist does not use nostrums does not relieve legitimate practitioners from obligations to see to it that unprofessional men do not use them, since their use is a disgrace to the whole dental profession.

The Dental Review for February, 1895.

"Arsenic," by Dr. A. G. Johnson; read before the Odontographic Society, December 10, 1894. The writer gives a formula or the devitalization of pulps, especially valuable where there is

inflammation and something exerting a local anæsthesia is needed:

Arsenious acid..... gr. 20
Hydrochlorate of cocaine..... gr. 25
Lanolin q. s. ft. paste.
Keep in large open mouth vessel.

He says that this preparation is invariably successful, and a second application is rarely needed. The operator is especially cautioned to see that the pulp is first relieved of as much inflammation as possible, and the following directions for doing so are given. Apply the dam; disinfect and dry the cavity; if pulp is congested, apply cocaine 20 per cent until obtunded; puncture pulp with sharp broach; wash cavity with cassia, then with peroxide of hydrogen, and dry; stop oozing with cotton saturated with carbolic acid. Now apply anodyne; place cotton saturated with eugenic acid over pulp, cotton over this, and cover the whole with gutta percha. After reducing inflammation as much as possible, devitalize. Adjust dam; wash tooth with alkaline solution; wash cavity with mild antiseptic and dry; if possible, secure exposure before placing devitalizing agent; take small portion of arsenic preparation and place over pulp; cover with folded bibulous paper; cover the whole with thin layer of cement mixed thin enough to run into cavity; let application remain at least twenty-four hours. The writer closes by saying "As a substitute for arsenic, cocaine will yet rank number one for pulp devitalization. In small tortuous canals, difficulty will be experienced in forcing the cocaine into the canals; but how much better, gentlemen, in such cases will it be to remove the bulbous portion of the pulp under this grand anæsthetic, leaving the fibers alive and healthy, ready to assume the function of nourishing the tooth, instead of devitalizing, by arsenic and leaving the dead to take care of itself, which would be mere folly to assume."

"How can we convince our patients that we are humane?" by M. R. Harned, D. D. S,; read before the Northern Illinois Dental Society, October 17, 1894. The writer says that when a dentist first begins to practice, his main idea is to have his work mechanically correct, but after he practices and gains experience he should not forget that he is working on human beings, and should try to reduce the pain in operations as much as possible. If the dread of a dentist is not inborn, it is very early instilled by

those who have had dentistry done, and dentists should try and counteract this feeling. Some suggestions are given to this end: Make friends with a child if possible and gain his confidence, then keep it by never saying you will not hurt him unless you mean it. If he has a tooth to be extracted, either put a little cocaine on the gum, or squeeze the gum with the thumb and finger so as to benumb it. In extracting for an adult, assure him that the pain will be very slight, and either use the thumb and finger pressure, or a one per cent. solution of cocaine hypodermically. If in filling the dam has to be applied, rub a little cocaine on the gum; but if you have a saliva ejector, the dam need not be used nearly so often as it is. It is not always necessary to puncture the pulp and let it bleed before devitalizing; rinse out cavity with warm water, apply very little arsenic on cotton, press it as close as possible to pulp, protect with oil of cloves, oxide of zinc, and cover with cotton dipped in sandarac varnish. If patient returns shortly with unbearable ache, remove application and apply equal parts of aconite and carbolic acid to stop pain. Much unnecessary pain is given by previous separating of teeth; when patient comes for operation inject a little cocaine, apply wedge, double-bowed Ivory, Perry, or other separator, and do the work at once with no suffering to patient. Use a little cocaine where a clamp is needed to retain dam, and when fitting and setting a crown. "I do not like the expression 'painless dentistry,' nor do I believe in it, but I do believe in making operations as little painful as possible. Cocaine is the thing which, used with care and thoughtfulness, will in time overcome the idea of the inhumanity of dentists."

"Porcelain Faced Bicuspid Crown," by A. W. McCandless, D. D. S.; read before the Northern Illinois Dental Society, Oct. 17, 1894. The author does not claim that this method of making the crown is new, but as he was asked he gives a very full description of how to make it. Having properly prepared the root, fit a band thereto just as for a telescope or shell gold crown. Cut out buccal side of this ferrule about where porcelain facing is to be placed. Get perfect articulation, tack cusp to ferrule at farthest point from porcelain, then cut away gold of cusp down to point of cusp, approximating shape of porcelain face at that end Grind facing and trim opening in gold that is to receive it, until fit is fairly accurate. When facing is ground to proper shape, a

little smaller than space, to allow for thickness of gold backing, bevel edges of porcelain all the way around, then when gold backing is thoroughly fitted, place tooth, backed with pure gold of thirty gage, in position. Catch gold backing to ferrule, cast with sticky wax, slip porcelain off, invest gold in long fibre asbestos moistened with water, leaving only enough gold exposed so that with a little solder backing it may be united to ferrule, remove investment, fill joints with wax where solder is to flow, fill whole interior of crown with plumbago paste so that solder will not flow where it should not, then complete soldering of joints and flow up enough solder to give proper contour to finish crown. Here a lower grade of solder is used for filling cusps. Slip porcelain facing to place, grind gold to proper shape and finish, and a perfect joint between backing and tooth should result. Remove facing and force to place, having a thin film of cement between gold and porcelain. When cement has set, carefully bend pins of tooth outward from each other to hold facing. For crowns use 22 carat gold, 28 gage, and 22 carat solder, with 14 carat solder in the cusps. When crown is finished and polished, have it plated with pure gold, which prevents tarnishing and improves the appearance. Many things commend this crown; natural appearance, strength, utility, etc.

"Our responsibilities," by M. L. Hanaford, D. D. S.; read before the Northern Illinois Dental Society, Oct. 17, 1894. The author of this article says that the discussing of such a theme publicly is very necessary, since dentists are isolated, and each one conducts his practice according to his own views. Too many operators, in their anxiety to do their work conscientiously and thoroughly, lose sight of the pain they inflict, and the strain they make on their patients' endurance. Dentists are responsible not only for the excellence of a given operation, but for a mistaken diagnosis, for the oversight of needed operations, and for the proper instruction of patients concerning hygienic and prophylactic measures. The too careful operator is very often responsible for the dread of anything relating to dentistry, since by his injudicious and needless labor he wears out the endurance and so predjudices the patient against all dental operations. "I have thus endeavored to show that we are responsible for the care and general welfare of the teeth of our patients, which includes not

only fidelity in the performance of given operations, but a correct and early diagnosis of every pathological condition of the oral cavity, and a proper instruction as to hygienic rules. Second, for the suiting of our operations to the time, purse, and power of endurance of a patient, especially the latter. Third, for the mental impression in regard to us as dentists, and our calling, which the patient carries with him out of our office door. I have said nothing of the dentist's responsibility to himself, which might include personal health as a duty, the confining of office attendance within reasonable limits, taking abundance of outdoor exercise, etc., or to the community in which he lives, which would prompt him to fair and honorable dealing, in which mushroom business success by short cut methods would have no part. In short, to be a good dentist or, as the lamented Atkinson used often to pray, "the best dentist in the world," requires an array of virtue and a strength of character most wonderfully comprehensive, toward which as our ideal, though we may strive ever so faithfully, there will still be other and greater possibilities before us."

The Dental Register for February, 1895.

"Harmony," by H. L. Ambler, D. D. S., M. D.; read before the Ohio State Dental Society, December, 1894. This article urges that as the practice of dentistry and medicine is interwoven and very intimate, so the relation and feeling between the dentist and physician should be of the friendliest nature. Neither should try to be independent of the other, and consultations will alter their ideas of each other, as well as relieve suffering. There are many cases both in dentistry and in medicine which result fatally, but which might have resulted differently had a physician or a dentist been consulted. There is too little attention paid to the study of medicine in the dental colleges, and too little to that of dentistry in the medical colleges. Children's diseases very often come from the condition of the teeth, and many disorders of the eye and nose can be traced to the same source. The teeth are nearly always the disturbing element in diseases of the antrum, and have even caused insanity, rheumatism, epilepsy, and neuralgia. With these facts before us, it is clear that no barrier should be placed by individuals or societies between the M. D. and D. D. S., and each should learn to consult and in a measure depend upon

the other. Those who took part in the discussion of this paper generally agreed with the writer, and they nearly all felt that there should be no disharmony between the two professions, but that there was not so much as formerly, nor so much as the article implied.

"The Teaching of Histology and Anatomy in Dental Colleges," by C. M. Wright, D. D. S.; read before the Ohio State Dental Society, December, 1894. The writer says that the study of anatomy in the dissecting room, and of histology in the laboratory has two things for its object. One is to let the student see the structure of the human body microscopically; the other is to train him in the manual art of cutting up tissues, so that they may be seen most advantageously. Now, why is it necessary for the student to have the manual work of dissecting and mounting? Can he not acquire all the factors he needs of morphology from seeing the dissections made by a skilled hand? Furthermore, the qualities of tissues are more easily studied in specimens made by an expert than in the crude cuttings of a student. So, would it not be better for the student to take the slides mounted by a expert, and use them in his microscope, together with text-books and the explanations of the teacher, rather than to spend his time mounting his own slides? Since it is not necessary for a man to hammer chips from a block of marble in order to cultivate his knowledge of sculpture, nor to grind up paint in order to become a connisseur of paintings, so a student need not cut up sections of bone, muscle, and nerve for two months in order to become an histologist.

"The Teeth of our School Children; what can be done to save them?" by J. C. McCoy, M. D.; read at the American Medical Association, San Francisco, June, 1894. This article is written to show that the teeth of most school children are in a frightful condition, and that nothing is being done to preserve them. In one school where an examination was made, out of seven hundred pupils, from six to eighteen years of age, only fifty cleaned their teeth every day, and the majority of the rest did not even own a tooth-brush. The cause of this state of affairs is ignorance on the part of the parents, and the neglect on the part of the children. Many people cannot afford to pay very much to have their children's teeth taken care of, and so instead of trying to instruct the

children how to preserve their teeth, they simply trust to nature and do nothing. The remedy is, for every dentist to teach the parents whenever he can the value and need of care for the teeth; for every dental society to appoint a competent committee to prepare for distribution among parents a manual on the care of the teeth, and for the same committee to induce the State Boards of Education to require the teachers in the public schools to teach the children in their classes the need and how to care for their teeth.

The Ohio Dental Journal for February, 1895.

"The Small Porcelain Furnace, Incidentally," by Grant Mitchell, D. D. S., Canton, Ohio. The writer gives a method for crowning badly broken down roots. Take a Logan crown of suitable shade, and grind to fill labial portion of root. Anneal at white heat a very thin piece of platinum foil, press over broken off crown, if it has been saved, and trim to exact shape, then transfer to root and puncture for insertion of dowel post. Work pink parafine and wax till soft, place around pin of crown, immediately insert pin through opening of platinum into root, and firmly press to correct position. Wait until wax hardens somewhat, remove crown with wax and foil, and invest in plaster and powdered silex (eq. pts.), being careful to retain exact relation between foil and crown after wax is washed out with boiling water. Gradually fill space between foil and crown with Downie's porcelain enamel, and bake, if necessary, three times.

A method for retaining appliances is also given. "After the teeth have been regulated, make the retaining bands of platinum plate of suitable gauge, solder with pure gold, coat the labial surface with properly shaded enamel, and bake, and there should be no trouble from scaling off."

"The Use of Sulphuric Acid in the Treatment of Roots for Immediate Filling," by Chas. Welch, D. D. S., Wilmington, Ohio; read before the Ohio State Dental Society, December, 1894. The writer says that in the last year he has treated 103 cases, with the patients' ages varying from fourteen to seventy-five years, and under every condition from a recently extracted live pulp to a chronic abscessed tooth, and has been successful in all of them. He filled every tooth immediately after using sulphuric acid fifty per cent aqueous solution, except in cases of blind abscess with

pus in the root canal. These, after cleansing canal with acid, he filled it with glycerine and iodoform made into a paste, left it in a week, then removed and filled permanently.

His manner of treatment is: first, apply dam, open pulp chamber freely, soak pledget of cotton in sulphuric acid and place in chamber. Pump acid into canal to apex of root with a No. 5 Donaldson Canal Cleanser. When apex is reached patient will complain of pain, but no trouble will arise from acid going through foramen, as acid on cotton has killed bacteria. Second, with drop tube flood chamber with saturated solution bicarbonate of soda, which throws out debris, neutralizes acid, and cleanses and apparently whitens tooth. Then dry thoroughly with five per cent solution of pyrozone followed with hot air. Third, with a minim syringe flood canal with equal parts carbolic acid and iodine, followed with iodoform and glycerin, which force through root. Then use chlora-percha with a gutta-percha point, which finishes treatment, and tooth is ready for permanent filling. Those who took part in the discussion agreed with what Dr. Welch said, and Dr. J. R. Callahan emphasized the point of having the acid go through the foramen.

"Characteristics," by F. E. Battershell, D. D. S., New Philadelphia, Ohio; read before the Ohio State Dental Society, December, 1894. The writer of this article gives the characteristics by which the various professions are recognized, and says that a dentist should be known by a gentlemanly bearing, rather than by a miniature set of teeth or a naked, three-pronged molar hanging from his watch-chain; and by a cheerful, assuring voice, rather than by a display of much gold in the front teeth and a readiness to explain its presence there. He recommends that a dentist should abstain from the use of tea and coffee for the sake of his nerves, and especially from tobacco and liquor, as they are not only harmful, but very prejudicial to a professional reputation. And that a dentist should have a ready sympathy, much tact, and an absence of that which afflicts so many men bearing the title "D. D. S.," hypersensitiveness.

The Dental Headlight, January–March, 1895.

"Dental Education," by P. D. Houston, D. D. S., Lewisburg, Tenn.; read before the Nashville Academy of Medicine, October,

1894. In this paper the writer speaks of the progress made in dental science, and endeavors to show that no matter how well educated a dentist may be, if the people for whom he hopes to work are not educated up to the needs of good dentistry, there is more use for a teacher than for a dentist. He speaks of the great ignorance and fear of dentistry possessed by so many people, who neglect their teeth until they decay, and never have them fixed until the pain becomes unendurable. He suggests the following methods to remedy these faults and to educate the public. That articles be written for the daily papers and literary journals showing the necessity and possibilities of dentistry. That the dentists speak in the schools and seminaries when opportunities present themselves. And that efforts be made to have a text-book on the anatomy, physiology, hygiene, and the capabilities of operative and prosthetic dentistry introduced into all the public schools. "If the children of our land were taught these principles, it would be of inestimable value to them. It would make the dental profession more pleasant and profitable. By understanding the hygienic principles of the teeth, a great deal of money would be saved to the individual who might need dental work. The dentist would be saved from the necessity of lecturing so much to his patients, the patient would understand enough to know that the dentist was doing an honest job for him, and there would be more satisfaction for both parties."

Items of Interest for February, 1895.

"Dentistry in England," by Dr. D. W. Henderson, an English dentist, Mankato, Kan. This is a rather severe criticism of the methods used and the knowledge possessed by English dentists and doctors. The writer says that in this country each profession tends to its own business, and the doctor calls in a dentist when needed, and *vice versa;* but that in England the physicians try to practice both medicine and dentistry. Furthermore, that they have a great deal of political influence, which they use to hamper and keep down the students of dentistry. And that everything which England has in the way of advanced dentistry, such as continuous gum sets, gold fillings, etc., has been imported from America.

"Fractures of the Maxilla," by Dr. P. L. Haight, Little Falls,

N. Y. The symptoms are given: Crepitus, pain on opening and closing the mouth, swelling and inflammation, inability to masticate, and usually a marked irregularity of the teeth. The inferior maxilla may be fractured at any point, but most frequently near the mental foramen. Should the condyle be fractured, it will usually occur at its neck, and this is probably the fracture most to be dreaded. The treatment of these fractures is simple. Bring the parts into perfect apposition, and retain firmly till ossification is complete, which requires from two to four weeks, depending on age and condition of patient. Before taking impression always make thorough examination for splinters of bone, etc. Remove any fractured teeth or diseased roots, as their retention might interfere with a perfect union. Devitalize all exposed pulps or teeth which might ache. Take impression in wax or impression compound rather than plaster, for two reasons: First. The removal of the plaster impression is painful. Second. It is too good, for if tin foil is used on cast, the splint, when vulcanized, will fit teeth too closely, and require too much force to get it in place on teeth. It is better to remove impression before it becomes stiff. If done carefully and quickly put into cold water, the impression will be sufficiently perfect. Avoid tight bandages, and if possible, do not bandage at all, as a free flow of blood to injured parts is one secret of success. An antiseptic wash should be used by the patient two or three times a day.

The Pacific Coast Dentist for February, 1895.

"Crown and Bridge Work," by Dr. Wm. A. Cummings, D. D. S., Portland, Ore.; read before the Oregon State Dental Association. The writer said in crown-work the first thing to be considered was the root, which should be in the best possible condition, and that in the hurry to crown the root, the neglect to get this condition was the cause of many failures. Great care should be taken to select a crown for the eight anterior teeth, and except in a few peculiar cases, gold crowns should not be used for them. The dentist who places a gold crown on any of these teeth is regarded by the profession as lacking in artistic knowledge and good taste The full gold crown is the simplest and strongest, and when it reproduces the contour of the original tooth, and fits the root perfectly, it is the best that can be used. Platinum is too nearly

the color of silver to make a satisfactory crown, and whether it resembles the tooth color more than gold is an open question. In making a Richmond crown two points must be considered; the preparation of the root, and the color. A Logan crown is not difficult to match for color, and is very good for the six anterior teeth. For the bicuspids the English tube teeth are very good. With a strong post and a burnished cap of platinum, the tube tooth secured to a pin with cement makes an excellent crown. All surfaces can be ground, and if the crown be broken it is easily replaced.

In making bridges, the writer said that too many men fail through lack of knowledge and experience, for since patients were willing to pay large fees for a bridge, dentists who knew nothing of bridge-work were tempted to experiment. A bridge should not be made too large, or more strain will be put upon the natural teeth than nature ever intended. Where more than one tooth is lost there is always considerable absorption, and in making artificial dentures great care should be taken to replace the absorbed process. One essential thing in a bridge is, that it shall be so constructed that, if it rests on the mucous membrane at all, the point of contact should be so small as to afford no lodgment for food. Bridges should be placed only in perfectly healthy mouths. When an anterior tooth is missing, place a Richmond crown on the tooth selected to carry the bridge, attach a plate tooth to it, and it makes an ideal permanent bridge. A tooth should not be banded to carry one end of a bridge, or to support the bridge itself, as the band will almost always work loose and destroy the usefulness of the teeth encircled. A band cannot be fitted close enough around a tooth to exclude the fluids of the mouth and prevent the cement from washing out, thus furnishing a lodging-place for food and causing decay.

"Crowning Badly Decayed Roots," by W. C. Logan, D. D. S., Astoria, Ore.; read before the Oregon State Dental Association. The writer says that many roots are sacrificed, which might be saved, and gives the means he employed in a few cases. A right superior second bicuspid had the distal margin decayed well down in the alveolus. The fungous gum was pressed aside and the decay removed. On nearing the root-walls, much pain was caused, showing how little dentine was left. After decay was removed, a

piece of gutta-percha base-plate was softened, dipped in campho-phenique and carried to the apex, followed by a pledget of cotton, and the patient was told to rest a few minutes. Then the root was thoroughly dried with hot air, cement was mixed and pressed well up to the gutta-percha, followed immediately by amalgam, which was built down one-sixteenth below the gum. When amalgam had set sufficiently, it and the edge of the root were beveled with a corundum disk. A gold crown was adjusted the next day, and now at the end of three years it is as sound as when put on.———A right superior central, the crown of which had been lost twelve years ago, and soon after an abscess formed at the apex. Treatments gave only temporary relief, so a method was used for crowning which would strengthen the shell of the root and leave the tooth so that it could be treated, if necessary, without removing the crown. All decay was removed, and two tubes were made, one to fit the other. The larger was fitted to the canal, and combination filling was built up around it as before described, thus giving a solid foundation to work on. A ferrule was made and put in place, then with a spear-point drill a hole was made through the ferrule into large tube already in place. The smaller tube was then placed in position with the end well up to the apex, the other end exposed about one-quarter of an inch, an impression taken, varnished, soaped and poured with marble dust and plaster. The model was cut out carefully, as the marble dust and plaster are very brittle. A plate tooth was fitted and waxed into position with enough marble dust and plaster to cover face of same. After drying, the case was soldered, finished and put into position, cotton was dipped in campho-phenique and carried into tube to apex of root, and the opening on the lingual surface was sealed up with gutta-percha. This case has been in place two years and has given no trouble.———A right upper second bicuspid, the owner of which, a lady, did not wish a gold crown. The root was prepared as in second case with a tube set in, a ferrule with solid pin was used, and a crown with a porcelain facing and gold cusps was made in the usual way and mounted, and now is doing good service.

"Treatment of Pulpless Teeth," by A. T. Hyde, D. D. S., Merced, Cal. The writer believes in iodoform used in a vaporizer, and says he has had great success. "My method of treating

either the condition known as alveolar abscess, or putrescent pulp-canals, or recently devitalized pulps, is to gain thorough access to the pulp-chamber and then with a broach carefully clean the canals, syringing with water as hot as can be borne by the patient, and sometimes adding a few drops of carbolic acid to the water. After drying the cavity and canals with cotton and protecting the tooth from moisture, I put a small quantity of iodoform (crystal) into the chamber of the vaporizer, heat and drive the fumes into the root-canals. If I can have the patient return for another treatment I put in a dressing of eucalyptol and iodoform, seal the cavity, and the next time I treat with the vaporizer only and fill both canals and tooth permanently. If patient cannot return, I fill immediately, no matter how sore the tooth may be, and find I have no trouble. If there is a chronic abscess I sometimes lance from the outside and inject a few drops of aromatic sulphuric acid, or cauterize with carbolic acid. One may use any method he chooses in treating, finishing with the vaporizer, and satisfactory results can be obtained. I have personal knowledge of cases in which the canals were improperly cleaned, in fact scarcely touched, and in spite of this there has been no trouble. The vaporized iodoform seems to form a complete coating upon the sides of the canals clear to the apex, and to fill the open tubuli. This is mastering a great difficulty for us, as we often find much trouble in getting most of our medicines far enough into the small canals to be of much benefit. It can also be used with good effect in capping pulps. In the use of the vaporizer I wish to advise the operator to place but a very small quantity of the crystals in the chamber at a time, as a deposit so heavy as to be troublesome to the patient may be made, in so far as it may escape into the mouth."

The Southern Dental Journal and Luminary for February, 1895.

"Regarding young men who contemplate entering the profession," editorial. This article makes a plea to practicing professional men to advise with young men who are contemplating entering a profession. "Practitioners of a profession might many times warn and discourage young men contemplating its study, whose talents they know to be unsuited. It is true such advice is often of no avail because misapprehended. In many cases, how-

ever, good sense and judgment would prevail, and a valuable life-work be made useful by diverting it to its proper channel." It also shows how a great amount of harm is done to the credit and reputation of a profession by those who are not fitted for the work they have taken up, and so have no enthusiasm and often very little interest in it.

The Journal of the British Dental Association for February, 1895.

There is an announcement from a Spanish journal of the death of an army officer which occurred in Madrid from an overdose of cocaine, injected to produce anæsthesia during the extraction of a tooth.

An account is also given from the Lancet of the death of a woman to whom chloroform was administered at one of the English hospitals for the extraction of a carious wisdom tooth. The surgeon gave chloroform because he thought that no other anæsthetic would overcome the trismus induced by the aching tooth.

The Dental Record for February, 1895; London.

This journal reports the death of a young woman in London, to whom nitrous oxide gas was administered for the extraction of a tooth. At the inquest it was proven that the deceased wore corsets which were fully five inches too small for her, and that death resulted from that cause, so the jury exonerated the dentist.

Proceedings of the Chicago Dental Society.

Meeting, Dec. 4, 1894, Dr. A. W. Harlan read a paper on "Porcelain Inlays."

"In presenting a few thoughts on porcelain inlays, it is not my purpose to describe the manufacture of metallic, vulcanite, or glass inlays. By the term 'porcelain,' I do not mean porcelain baked on to platinum or iridium, but simply porcelain. There are three methods of making such inlays that I have practised. There may be others, but I have not tried them.

"The first method is to select a piece of tooth of the proper color, and grind it to fit the cavity, which has been suitably shaped. To facilitate the grinding and fitting, I take an impression of the cavity with plaster of Paris or modelling compound

and get the outline of the cavity from the model. The piece of porcelain is then ground as nearly the shape of the cavity as possible in order not to tire the patient by repeated trials in the mouth. A little pure spruce gum pressed in the cavity will tell you from time to time how nearly the piece of porcelain is fitted to the cavity. When the approximation is as perfect as it can be made, the surface of the inlay facing the bottom of the cavity is roughened with discs, and two under-cuts are made so that it will not be disturbed by friction. The rubber dam is adjusted, the cavity dried, and the piece is set with rather thin oxy-phosphate. Great care is necessary to have the thickness of the inlay a little less than the depth of the cavity. Inlays may be set with Canada balsam, if it is very thick, but generally it is better to use a thin oxy-phosphate or oxy-sulphate of zinc. Bits of porcelain with a little groove around the under surface, like a button, can be used if a cavity can be made deep enough, and may be adapted to incisors, cuspids, and bicuspids with little trouble. However, the neatest method of using porcelain is to take a rod and cement it into a mandrel, and grind it into the cavity, keeping it wet, and using at the last finely powdered Arkansas stone. Any exposed face of a tooth of suitable color, may be used for all cavities that can be made round. Canada balsam can be used to set these rods, but the fit must be very accurate, or the inlay will soon drop out. I generally set them with cement, and grind down the projecting portion subsequently. Some of these inlays have been in use for four years, and a few, made from pieces of teeth, are in excellent order after seven years. I have ground the ends off a plain tooth, leaving the pins in place, and fixed it to the end of an incisor by drilling holes in the living tooth opposite the pins, splitting the ends of the pins and cementing directly to the tooth's end, and had them wear very well. If the contour of the fitted end of the artificial tooth is too thick, it can afterward be ground down and polished. Do not use any polishing powder likely to stain any exposed portion of the cement fastening. I have seen porcelain inlays fitted accurately in the ends of molars by grinding down diatoric or other porcelain crowns, and imbedding them in cement or gutta-percha. Many cases of buccal cavities in molars would be better treated by setting porcelain in them, even though they did not fit accurately, than having them

filled with amalgam, or filling them poorly with gold. A plea is needed at this time for artistic appearance of the teeth, on account of the hideous and too rich golden appearance of incisor and cuspid shells that face us in parlors, places of amusement, churches, public conveyances, and even in the rural districts. Gold, or gold and platinum, is very conspicuous in an exposed tooth when the lips are parted, and for this reason I prefer using inlays where it is possible, if they can be made to suit in color and durability."

Dr. J. W. Wassall opened the discussion, and said that he agreed with the speaker and thought there was a great need and a great opportunity for something which would take the place of gold fillings in exposed teeth.

Dr. A. E. Matteson spoke of the difficulty of matching the color. He considered a glazed body worthless. He thought a Hill stopping dissolved into thin sheets with the oil of cajeput was the best cement for retaining inlays.

Dr. A. C. Hewitt gave an instance of some inlays he inserted ten years ago, which were just as good as when put in. He obtained an accurate fit by using the English body, cutting it in the shape and thickness desired. It was then attached with shellac to a piece of wood, with the face of inlay toward wood. After cavity was shaped and inlay nearly approximated, it was held on stick, then baked portion was covered with wax, and the wax applied to cavity and left there until it cooled a little. When withdrawn a perfect impression was left on side of inlay, and by holding stick and grinding slowly, an accurate fit was obtained without cutting beyond edges of wax. Just enough oxy-phosphate was used to moisten the outer edge of inlay, and to cement external portion of inlay to enamel, thus avoiding change of color from cement going under disc.

Dr. W. H. Taggart thought the change of color came from the porcelain not being thoroughly fused into a dense mass, but left in a porous condition. He recommended Taylor's shellac for mounting pieces of porcelain.

Dr. Harlan in closing the discussion, said that sulphur had been suggested to him as a means of setting inlays. He did not like Hill's stopping, as it disintegrated.

Meeting, Jan. 8, 1895, Dr. C. S. Case read a paper on "When should Congenital Cleft Palate receive surgical treatment?"

The writer did not believe in surgical treatment except in occasional cases where there was an abundance of tissue, since in most instances it was a failure. He claimed that the artificial means of treatment could, when skillfully performed, be relied upon to furnish a sure means of attaining perfect vocal articulation, free from the nasal tone; provided the operator was given an opportunity to properly develop the palate according to the needs and possibilities of the muscles, and the patient persistently tried to speak distinctly. Instances were cited where patients thirty years old had commenced wearing artificial palates with great success. He also claimed that if surgical treatment were tried, it should be before the patient was five years old, and only in those cases where there was an abundance of tissue; and that where it was tried after that age, no such good results were obtained as by the artificial method.

Dr. T. W. Brophy opened the discussion by saying that he agreed with Dr. Case in regard to surgical procedure in these cases, especially with reference to young children, but that he differed from him in regard to the treatment of certain cases of adults, as much advance in the surgery of this special line had been made in the last few years. He did not question the value of obturators, but he felt that many were getting along very satisfactorily by the aid of surgical methods. He said it was only those who had had unsuccessful surgical operations performed that applied subsequently for artificial appliances.

Dr. G. V. Black, of Jacksonville, gave an incident of a case which came under his notice. One of his patients, a woman twenty-three years old, had been operated upon when twelve years of age, and so successfully that it was hard to detect from her speech that she had a cleft palate. One day she was suddenly frightened, and became so excited that she could not articulate a word for the time being. Dr. Black felt that throughout life it was a continual struggle to articulate in cleft palate cases, unless the patients were operated upon when very young. He did not believe in operations for babies, but felt that the cases should be treated not later than eight or ten years of age.

Dr. T. L. Gilmer thought that operations should not be per-

formed before the patient was a year old; that unless surgical treatment was applied before ten or fifteen years of age, better results would come from an obturator; and that where the cleft had been left without surgical treatment until the patient was eighteen or twenty years old, the obturator would be much more beneficial.

Meeting, Feb. 5, 1895, Dr. W. B. Ames read a paper on "Plastics." He confined his remarks almost entirely to oxyphosphates, with which he had been making some experiments and tests. In a former paper the writer claimed that the cause which detracted most from the integrity of cements was the use of phosphoric acid largely neutralized with soluble alkaline phosphates. While unadulterated phosphoric acid cannot be generally used in the compounding of cements, he was still of the opinion that the nearer one can come to avoiding the neutralization of the acid, the greater integrity of material there will be. The absence of alkaline adulteration of the acid not only lends integrity to the mass, but it carries with it an absence of that objectionable stickiness and leathery consistency which is very often the cause of failure. Very sticky cements are peculiar in that they adhere tenaciously only to thoroughly dry surfaces. If the cavity wall is not absolutely dry, the cement does not attach itself to it; then there is a leak, and the material is blamed. A cement without this alkaline adulteration is not so extremely sticky, and adheres either to a dry or slightly moist surface. The author believes that the peculiarities of the different cements should be studied, so as to learn which are best adapted for the different operations. The non-irritant cements in which the acid is neutralized with alkaline phosphates are best adapted to the setting of crowns and the filling of cavities in very sensitive teeth. Cements containing little or no alkaline phosphates cannot be safely used in a very plastic or creamy state, as if so used the saliva may damage them before crystallization takes place. But if such oxyphosphates are mixed to a stiff doughy consistency the crystallization will be satisfactory, they will pack definitely, and give the desirable crispness during finishing. The prime cause of the destruction of a good phosphate filling in the mouth is friction. The cements which are known to be wholy unreliable in the mouth are less affected

by strong solutions of lactic acid than those which are known to be the very best. Ammonium hydroxide has been found to give results analagous to what is observed in the mouth, as the materials known to stand best in the mouth are least rapidly broken down by ammonium hydroxide out of the mouth. From what has been seen of the durability of good oxyphosphates in the mouth, the conclusion is that the ammonia liberated within the mouth of the average person must be insufficient to contraindicate the use of oxyphosphates. From his experience with inlays and with crowns, the writer was convinced that a good oxyphosphate cement very rarely loses any of its substance when protected from friction. The oxyphosphates can be relied upon, for the teeth of all children, and for most fairly well matured young persons; for young mothers and young wives about to become mothers; in the management of all small cavities on surfaces of the teeth which are difficult of access; and in the management of large cavities requiring bold contour. Oxyphosphate of copper can be used in the management of large cavities upon the buccal or posterior surfaces of second or third molars; and for the flushing out of all shallow grooves without angles or undercuts, about the gum margins of any of the posterior teeth, because of its ready adhesion to a plane surface even when a trace of moisture is present. In regard to properly shading the cement to blend with the tooth color, it is safer to rely upon the gray tints, avoiding the yellow and very white material. Use a matrix as often as possible to facilitate the packing and save finishing, and keep the material protected from the saliva as long as the exigencies of the case will admit.

Dr. Edmund Noyes said the profession was to be congratulated upon the progress that had been made in cements, but he was not prepared to believe that the era of gold fillings had gone by. He considered gutta-percha a valuable material for the lining of cavities as a protection and non-conductor of heat, and nearly always used it under phosphate, amalgam, and gold fillings, but he did not like it for permanent fillings.

Dr. J. W. Wassall did not believe in the use of gutta-percha under gold and amalgam, since he found that it swelled and tended to loosen the filling afterward. To make a harder surface, he used enough oxyphosphate to fill the cavity, and as it hardened he burnished the surface down with a smooth burnisher.

Dr. E. M. S. Fernandez had been very successful with amalgam, and thought it was due to the manner of manipulating rather than to the material itself. He used cement, not too thick, for crown cavities, and burnished the surface of the filling with finely pulverized jeweler's cement. He colored his cements with pulverized jeweler's cement, was careful not to use cement too thick, and to have the cavity clean and dry. He thought it was a mistake to use a steel matrix, as the phosphoric acid attacks the steel, and the steel in turn destroys the surface of the cement before it hardens, so he used gold matrices. He believed in the use of cement for lining large cavities, but not in gutta-percha.

Dr. Brown, of Duluth, Minn., used gutta-percha under crowns in place of cement, and found it did not disintegrate; answered all purposes; and a crown set with it could be easily removed.

Dr. Ames, in closing, said the average dentist did not give cement the vigorous rubbing it should have, as it was mixed on too small a slab, and did not incorporate enough powder. Being asked, he said that cements were colored with different metallic oxides, and with the different shades came different working qualities.

Dr. T. W. Brophy read a paper on "A New Operation for the Exsection of the Inferior Dental Nerve," in which he deprecated the making of external incisions, because uncalled for and unnecessary. The operation which he had devised, practiced, and which he recommended to the profession, in consequence of its simplicity and efficiency, was conceived by him while engaged in operating, by the passage of a flexible silver probe into the canal. It occurred to him that the application of a flexible drill, after the form of Gates dental canal drill, entered at the mental foramen and carried backward to the inferior dental foramen, would thoroughly remove the contents of the canal. After the nerve is removed, the treatment consists in antiseptic cleanliness. He was convinced that there is not a nerve or a branch of the inferior dental nerve given off direct from the trunk which passes to the apex of every tooth root. The lower teeth are not dependent for nutrition upon the blood supply of the inferior dental artery, nor is their sensitiveness dependent upon the inferior dental nerve.

Dr. G. V. Black did not know of any reason why the pulps of teeth should die from the removal of the contents of the inferior

dental canal. The collateral circulation is usually very abundant throughout the alveolar portion of the bone, passing through the Haversian canal freely from the peridental membrane to the periosteum; that cutting off the blood supply passing through this canal would not rob the teeth of blood. So far as the peridental membrane is concerned, we have not injured its sense of pain nor its sense of touch. So long as the blood supply reaches the apex of the root and enters, the pulp may live and be sensitive, but we would expect some diminution of sensibility. As to a special branch of blood vessels being given off from the contents of the inferior dental canal, if anyone will examine an injected specimen of the vessels in this region of the peridental membrane within the Haversian canal, he will find there is no use for such a branch, and that the collateral circulation is abundant.

Dr. A. W. Harlan offered a thought in support of the theory advanced by Dr. Brophy, namely, that if the teeth were dependent for their vitality upon the presence of the inferior dental nerve in the inferior dental canal, the operations that have been made from time to time at the entrance of the lower maxillary of the inferior dental nerve for the cutting, stretching, and divulsion of the nerve at that point, would have demonstrated that the teeth would have died. Surgeons have many times severed the nerve at the entrance in the inner portion of the mouth and have cut out one, two, and even three inches of it, and still the patient has had sensation from the collateral circulation.

Dr. H. A. Gunther read a very interesting paper on the "Embalming Process as Practiced by the Egyptians," and exhibited a mummy and some photographs. Drs. Harlan and Reid made a few remarks on the paper.

Meeting, March 5, 1895, Dr. A. E. Morey read a paper entitled 'Advanced Dental Education,' in which he said the dental student of the present generation who avails himself of the training which the best dental colleges afford will have no reason to complain for lack of opportunities for fitting himself for the dental profession. Critically, there was too little scientific training, there being a lack of sequence in the courses of study or in the correlation of the various phases of studies which so depend upon each other. It is also questionable whether the average

student is capable of differentiation of contrary theories upon the same subject; where so much work is crowded into so short a time, confusion is apt to result. A good college could not make a *good* dentist of a *poor* student, and the reputation of colleges would be greater and the rank and file of their graduates would be of far higher grade if many who were termed 'unfit' were weeded out, or barred from entrance altogether. The dental and medical societies and clinics are sustained principally by the best men in their profession, and attendance upon these gatherings furnished the readiest means for acquiring the latest and best theories and the best modes of procedure. Much has been written and a large amount of advanced work done in connection with post-graduate schools and the Chatauquan courses. These systems are both very valuable for those who will do conscientious work in them. They are chiefly undertaken, however, by those unable to keep in touch with society and clinical work. A field of special work is experimentation. Experiments are suggested to the active dentist in almost endless variety.

Dr. Louis Ottofy deprecated the fact that dental literature had not been placed upon the basis of the literature of other professions. There is not a single work in dentistry that could be called strictly one on oral surgery. Dental educators questioned which is the better plan, whether to give students iron-clad rules to follow, or to give them a variety and let them exercise their own judgment. Formerly, when students were admitted at random without preliminary education, the iron-clad system was best, but now he thinks it is a good plan to teach students the different methods in vogue. Examples were cited. In regard to telling some students that they were incapable of becoming successful practitioners, the better dental schools carried this into effect. Dr Ottofy then referred to the importance and usefulness of post-graduate work.

Dr. C. P. Pruyn said the feeling of dental educators to-day is that three years is altogether too short a time to fit a young man to enter upon the practice of dentistry. There is a great advantage in taking hold of men before they reach the age of twenty five, because during this formative period both their minds and hands could be trained.

Dr. Edmund Noyes believes that boys who are to become den-

tists should have a high school education in manual training schools, where there is training both for the hands and mind, which would answer equally as good a purpose as preparation for the training required in the technic room, the operating room, and laboratory.

Dr. Theo. Menges is not an enthusiast with reference to the four-year course, although he believes it would be better. If college courses were extended to three years of nine months each, much more satisfactory work could be accomplished than is possible with a five years' course of six months each. The preliminary course was defective in that dental students were not required to have a knowledge of Latin. He thinks no student can successfully study either medicine or dentistry without at least an elementary knowledge of Latin. The dental student should take a six months course in Latin. He advocates quizzing students, rather than lecturing to them, after they have studied the lectures definitely outlined in the text books that are used. More mechanical work should be taught in dental colleges, and more demonstrators employed. College faculties should study the best means of improving and raising dental education to a higher plane.

Dr. J. N. Crouse emphasized the importance of manual dexterity on the part of students before entering upon the practice of dentistry. While lecturing to students was fascinating, it was largely a farce. The creation of harmony in the dental profession should begin with college faculties. If dental college professors could agree among themselves and adopt a system of education for conducting dental schools in Chicago properly, it would be a great step in the right direction.

Dr. C. N. Johnson said there was no text book to teach students how to handle the dental engine, neither was there a book that could be placed in the hands of a student on any subject connected with dentistry and allow the student to follow the dictates of it. Dentists who attended colleges twelve or fifteen years ago had very little conception of what is being taught to-day. The fault is not so much with methods of teaching as in the class of men that had to be taught, and if dental education is to be established upon a higher plane, the poor material must be weeded out. Preliminary requirements are defective. He disagrees with

Dr. Menges, and believes that six months of the drilling such as is carried out in some of the dental colleges of to-day, gives students enough material to digest in a year. A session of nine months would give students more material than they could properly assimilate and digest. While he believes manipulation can be taught a student in three years, yet discrimination will be lacking, as his judgment is not sufficiently developed to say what shall and what shall not be done.

Dr. J. G. Reid thinks that while it is proper to give the theories of different men to students, it was more important for the professor to demonstrate to them the application of such theories. More could be accomplished by practical demonstrations than by theoretical knowledge.

Dr. A. W. Harlan then read a paper on 'Coagulants—Self-limiting.' The essayist had long contended that coagulants or coagulators of albumin would prevent their own diffusion in a tooth, and had from time to time made experiments and demonstrations to show that it is true He then referred to some comparatively recent experiments made by Drs. E. C. Kirk and James Truman of Philadelphia, in which these gentlemen tried to prove the contrary. The ordinary coagulants were creosote, carbolic acid, resorcin, zinc chloride, nitrate of silver, heat, some of the coal tar products, some other substances, such as alcohol, mineral acids, some vegetable acids. Corrosive chloride of mercury is not a true coagulant as a new compound is formed when it is brought in contact with albumin. Dr. Harlan then read a few definitions of coagulants taken from standard sources. He reiterated that coagulating agents—drugs—prevent their own diffusion in dentine when there is coagulable material in the dentine tubes. The experiments of both Dr. Kirk and Professor Truman do not prove that coagulating agents are diffusible. Dr. Truman's experiments show that zinc chloride would not pass through the sides of a root after one month's immersion in egg albumin. Dr. Harlan then exhibited two or three new experiments which served to re-emphasize the position he had taken on former occasions.

Dr. Thomas L. Gilmer thought the experiments of Dr. Harlan established beyond any doubt that coagulating agents did not pass through the dentine and cementum of the roots of teeth.

Dr. E. L. Clifford was under the impression that Dr. Harlan's statements were a little too broad as to the self-limiting power of coagulants, and believes there are cases, places, and conditions under which their self-limiting power is restricted, although he was not prepared to state what these cases were.

Dr. Louis Ottofy had followed the experiments of Dr. Harlan for a number of years, and while he had been skeptical as to their correctness, he admitted that he had always followed them in practice.

Dr. Harlan, in closing, said the principal value to a dentist of experiments and exhibitions of this character must be in the practical application.

ARTICULATION FOR CROWNS.

I notice in many reports in our dental journals and societies of the manner of getting an articulation for crowns or bridges, that wax or modelling compound is used. Why not use plaster, it takes a more accurate bite and is just as simple to use.

After the band is fitted and in place, mix a little plaster just thick enough not to run, then take a little on the end of your mixing spatula and place in the mouth, covering the band and one or two adjoining teeth, then have the patient close the mouth and keep it so until the plaster sets. When set, have patient open the mouth and if the plaster can not be lifted off easily, just break in center and remove the two halves, then wax together, put band in place, and varnish and fill as you would any bite; but before filling bite fill the band with wax, then when you separate the bite you will have no trouble in lifting the band from the model. Try it. BUFF.

A NOVEL DENTAL OPERATION.

In August, 1894, *Dental Cosmos*, under the head of "Hints, Queries and Comments," Dr. W. H. Baldwin calls attention to the work of Gold Crowning Deciduous Teeth:

My practice in this dates back to February 8, 1893, when the superior central incisors of my son, then four years old, were crowned. This practice has been followed by me ever since, including four crowns for an infant daughter in November, 1893, she then being twenty-three months old.

While attending the Illinois State Dental Association in May last, 1894, by invitation of the chairman of the Clinical Committee, my children were presented and their crowns commended by members, and the belief expressed that this was the first of its kind on record.

This method of treating deciduous teeth must prove of vast advantage in durability, and relief from pain. W. W. SHRYOCK.

Letters.

LETTER FROM NEW YORK.

NEW YORK, February, 1895.

To the Editor of the Dental Digest:

The Transactions of the World's Columbian Dental Congress are before us. We have turned both volumes over leaf by leaf and we exclaim:—

"A great credit to the committee on publication—well done, rest from your arduous labors, for it could but be such. We cannot 'digest' them in a day, so we will give them attention from time to time." There may be some hard things to digest, and we trust that we will need no "new pepsin," as suggested by the editor of the Cosmos, in speaking of the new enterprise, "The Digest." On the whole we think he did quite pleasantly in his commenting,—of course reading between the lines is always in order. Bro. Barrett is a little in a maze, he wonders "if it will be a rival after all (we) have done?" Well, as "he is not an histologist," we will let him pass, we think he will "coagulate" when he sees that statement in print, though it be (true). His little missive did not count that was dropped down before Prof. Harlan at the Union meeting of the 1st and 2d District Societies, although it did come by the mouth of a "mutual friend;" but Prof. Barrett gets there when he discusses "morphology," he has got these fellows right on his tongue - every one to his taste.

This is the last, "a Scientific Laboratory." We have all the money we want, but "brains" we do need, and as we came unexpectedly upon our friend on the corner of Fifty-seventh street and Fifth avenue, we said: "Why, what are you doing up on the 'rich man's belt' this time of day?" "I'm looking for a man to take charge of my laboratory, but he can't be found," he says. "Do you know that outside of the A. D. A. or the S. D. A. we haven't got any men that know anything about science, so when we get these distinguished men to read a scientific paper we haven't got any one in New York (in our societies) save two or three, that can cross the Damascus blades worth a cent." Heitzman comes in and trots out his *pets*. There are big moves on foot and then an education by "our Col-

lege" will set in motion a mental activity that will crush all former movements; no mind, no matter, but if they can be stirred up. "Ghee"—and no "Haw." Nothing like a good digestion and it is the impression that we've got it. A general acclaim that it is a good move and one much needed. "Why," says now and then one, "every one knows that business is business, that is perfectly legitimate, certain things can't be said if it is against those that buy our goods." There is no discussing this, we have found it out as a correspondent. We have tried too justly to show up some glaring defects of the *code* among our foremost Educational Institutions, but when our letter came along something had got on our ink marks (a trade chemical we think), they were all erased. We said, "All right, it is your journal, possibly we will try it again." The young "Pacific Dentist" comes to hand late February 9, but is not lacking in some things, modesty; certainly Dr. Dean's article as a leader, this relates to Dr. Talbot's censure regarding scientific advance. Read! Read! entirely and get the benefit of its *sound* teaching; Dr. Talbot will admit Dr. Dean stands in the front rank as a teachable writer, we read him with keen relish. His article on "Law" in the Cosmos was undeniably a subject worthy of our highest pride.

Dr. William Beecher Sherman is out on his honeymoon with Bessie Briggs, but he stopped over long enough to give a slap and lick on Editor Kirk for his dogmatic dictation concerning Stomatology. We think Editor Kirk will enjoy it also, he wears a fighting "bang." Don't let us get in a fret over these things; they should be like so many whetstones; nothing suits us more than to see two bright intellects scintillating forward and back; some of these sparks are going to make a fire worth our attention. Note an important statement at the end of Dr. Dean's paper. It is the "Spirit" of our purpose, "our sincerity." Keep sincere and all will work for good. Sure.

Bridge litigation in the Bennett case deferred one month. It was to have been argued in Brooklyn, February 5th. We learn that Dr. Crouse sees an advantage by the delay, good. Sometimes they are said to be dangerous. Dr Crouse has been so continuously on the winning side we pin our hopes to him.

"Suggestion" is getting an airing out in Minnesota. It works there; but it will be recalled that it did not in Philadelphia during

the hot controversy with the late Dr. James White, but that was between editors—it may be a little different in dental practice. We think we had better go slow before this is hung on the neck of an overburdened calling.

We notice some things that got into the Wells history as facts that will bear looking at the second time before laying away the archives. The testimony is not all in yet, we promise to see that the missing link shall be furnished. There are some incidents and co-incidents that will be of interest in connection with this history.

Dr. Custer, of Dayton, Ohio, presented the claims of electricity before the First District Society at the February meeting—a decided deficiency in attendance. Certainly, the absent ones missed an interesting meeting. Dr. Custer has given his inventive genius to the application of electricity for the baking of porcelain, giving a practical demonstration and producing a fine specimen of work. It was manifestly the thought that a new era is dawning upon this field, doing away with many defects which are prone to manifest themselves by all former methods. The force of Dr. Custer's claims rested modestly upon the results; these are more convincing than much controversy.

Dr. Crawford, president of the A. D. A., also edified the audience by some very intelligent remarks upon the dealing with the grinding deciduous teeth, pulpless. He advocated the grinding away of the length, thus allowing them to elongate by non-occlusion and so continuing it that extraction ultimately was needless. A common sense practice. He also emphasized the intelligence of keeping our children from mental forcing in school till the age of ten years. He evidently has given this subject much thought, we think. If he will make this subject the prominent one in his presidential address it will prove a decided incentive to an attention by the public that has never been given. We are impressed that Dr. Crawford has a line of thought that should be given to the public through the press, and we think if the executive committee will use this opportunity they can secure the liberal attention of the press and thus do what has never been done, viz.: to open the public mind to consider a subject that demands their serious and earnest notice. We have been aiming to do something in this line by both the A. D. A. and the S. D.

A., but so far nothing has been accomplished. It is timely, and we trust Dr. Crawford will by his mental activities open this matter and produce an address that such an enterprising paper as the New York Herald will be only too glad to spread before the world. It is time our profession gains the intelligent attention of the public and wipes out the hackneyed stigma of "Tooth-Pullers" and "Tooth-Carpenters" that has so long clung unpleasantly to us. If this move is laid hold upon as it may be, and should be, it will do the most effective service in the line of emphasizing the importance of our calling. Just here we have a sample case that serves as an illustration—a lad of eight years came into our hands—very bright and attractive—but my! how old and unchildlike. His father's ambition leads him to keep the boy's attention upon American history, reading it to him by the hour. So that his thought of greatness has taken on this thought—on being asked what his ambition was, he replies, "That there may be a great war, and that he may be a general and save his country like Washington." He cannot yet read sufficiently well to do away with spelling out many words. Now how did I find his teeth? Why, deformation indicated in a very marked manner, anything but a promising propect. His mental forcing is certain to leave its devastating work in a very general manner.

An ambitious clinic is on the tapis for March. New and original exhibitions, Drs. J. Palmer and Leroy are engineering the arranging of it. So far, they have italicized the spirit of the Jackson Administration. Live men are in demand these days and it is an attraction to watch their movements.

We enjoyed the perusal of the editorial on politics in the February International. We shall watch with more than ordinary interest the newly proposed movement by the A. D. A. to neutralize political ambitions. We think a chemical that will do this work will be a wonder. May we not look for it as an outcome of the forthcoming "Chemical Laboratory" that is in the incubator in New York? No hen nor pullet could be found, hence artificial heat, and then six degrees below zero has during the last ten days brought a hazard of mental activities—yet there is hope.

Dr. Boedecker offered his resignation to the First District Society at the February meeting. What it indicates we are not

certain. The Doctor has added luster to this society, surely. We think his spurs have been well earned. M. A. G.

A PECULIAR ACCIDENT FROM MICHIGAN.

DR. S. A. WARSABO, M. D., of Coldwater, Mich., at the request of Dr. L. L. Davis, of this city, sends a detailed report, which we have condensed, of a singular accident which came under his notice.

In the afternoon of Nov. 4th, Thomas Black, aged forty-six, in driving a coal wagon out of a yard, was struck squarely in the mouth by a wire clothes line, which was stretched taut. The man succeeded in stopping his team, released himself, and walked unaided to Dr. Warsabo's office.

The wire had caught him behind the upper molars, severing the soft from the hard palate, and fracturing the upper maxilla and nasal bones as follows: The superficial line of fracture corresponded with a line drawn from behind the last molar on each side to the apex of the nose, involving the lower and inner portion of each orbital cavity. The fractured part was lifted up almost perpendicular to the facial line, the antrum of Highmore was opened posteriorly, and there was considerable hemorrhage and sloughing of the tissues of the mouth.

The doctor and his assistant replaced the broken bones and sewed up the cuts. At the time of the receipt of the letter, one month afterward, the man's temperature had not at any time exceeded 99 degrees, and there was a good prospect of firm, bony union of the fractured parts, and good use of the upper maxilla. The sensibility of the nose and upper teeth, which was totally lost, had almost entirely returned; the nose, obstructed for a time, was open; and the deglutition, but slightly impaired all the time, was very good.

The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

Editorial.

A REPLY TO THE EDITORIAL IN THE COSMOS.

In the editorial on the Dental Digest in the February number of the Cosmos, the editor, after extending a cordial welcome, expresses the opinion that there is a field for such a journal as the Digest proposes to make of itself. He is also kind enough to excuse all errors on account of the difficulties of launching a new journal, and attempts to point out what he considers some of these errors and inaccuracies.

Errors there doubtless were, but the astonishing part is that our editorial friend selected as mistakes, statements which will not be questioned by anyone conversant with the facts. "It is somewhat surprising to learn," for example, that "the Dental Digest is the child of necessity," and that "heretofore the body of dentists practicing in the United States have had no mouthpiece." We have no doubt of the genuineness of our friend's surprise. We can only suspect as explanatory of it, however, that before he became the editor of the Dental Cosmos his knowledge of what was going on in the dental world must have been limited to his local circle. It is a notorious fact that when such a great movement as the Protective Association was being organized, the work had to be done almost entirely through circulars, since it received but a very meager support from the dental journals. This we have reason to know to be a fact since we did the work, sending the circulars and reaching the profession in every other way practicable as it was not possible to reach them through the journals. We appealed a number of times in the early history of the organization to the editor of the Cosmos for the support of that journal, but only once did we

succeed in getting it, and then in but a very meager editorial.

We do not think it could be argued by anyone that this movement was not in the interests of the dental profession, or that it was not needed, when one corporation alone, to say nothing of a number of others, invested $350,000 in patents, none of which were worth the paper they were written upon, and formed a corporation with which to extort royalty from practitioners of dentistry in the United States. But for the Protective Association this Company would have been at this time compelling every dentist to pay them royalty on some of their patents. It is safe to state that the dental profession has been saved $3,000,000 by this Association. The Crown Company estimates the amount much higher than this.

If such a result could be accomplished with no organ and without the aid of the journals, what could have been accomplished if the dental journals, which claim to represent the interests of the dental profession, had given the movement their hearty support? And why should they not have done so; for certainly the movement has never contemplated anything but correcting the evils of patent abuse and other impositions on the dental profession. We were questioned in the early part of the movement, by parties controlling journals, as to what the future work of the Association would be after we had gotten rid of the abuses of the Crown Co., and perhaps herein lies the secret of non-co-operation, as we refused, and very properly, to pledge what the future work would be. One thing is certain, and that is, the journals did not give anything like the support they should have done.

In regard to nearly all the journals being controlled by dental supply houses, or dependent upon the advertisements from these houses for support, we beg leave to inform our friend that before he became editor of the Cosmos, nearly all the large dental supply houses entered into a trust. A dental trust was certainly not organized in the interests of the profession, and while of course no criticism could be looked for from the journals controlled by the combination, there were a few journals which would have taken the side of the dentist against this unlawful combination, but if they had done so, the advertisements from the trust would have been withdrawn.

We take the ground that there is a vast difference between a Dental Protective Supply Co. composed of dentists, owned and controlled by dentists, organized on a co-operative basis, for mutual benefit, and in no violation of the law; and a combination or trust, forced to keep the prices up, and so tax the profession.

We had not intended to enter into this question of the trust at present, but it was forced upon us, and we now stand ready to defend the position we have taken, and if we are wrong we are not only willing but shall be glad to be set right. Perhaps the feeling and policy of the journals may have changed, and that they are now ready to aid in these reform movements. If so, no one will be more pleased than ourselves; for although the movements undertaken have already accomplished a great deal, the work is just begun. The experience some years ago with the Rubber Co., and lately with the Crown Co., should have taught the profession that, save for the Protective Association, they are wholly unorganized. Less than one-fourth of the profession as yet belong to the Association, while *every* dentist should belong to it, and if the journals are willing to aid in banding the profession together against imposition and abuse, what a future is before the profession.

Can anyone show why the journals that claim to represent the dental profession, and to have their best interests at heart should not help? We await a reply.

A CAUTION.

The conservative practitioner who keeps pace with the changes in methods of practice will, we think, agree with us in this proposition, viz., that alveolar abscesses will increase in frequency in proportion to the number of practitioners who follow the practice now being advocated of leaving the pulp, after being devitalized, in the roots of teeth, and making no attempt to fill them. So must there be a greater increase of trouble following the practice of immediate root filling, instead of the method of frequent treatments before filling, where the pulp has been dead for a considerable length of time. These two methods being advocated in so many different quarters, we wish here to sound an alarm and enter a protest against such practices.

The trouble growing out of the practice of leaving the devitalized pulp in the roots will not develop itself at once, and is therefore the more dangerous of the two methods, as the operation can be performed, the patient dismissed, and the trouble arising from such a practice may not come for a number of years. But too large a per cent of cases treated in this way will give trouble sooner or later. It has been but a few years since our dental literature was full of warnings caused by the published discussions where all forms of eye and ear trouble, and neuralgia had been discovered, and the cause attributed to teeth with pulp canals improperly cared for. At the time spoken of the discussions and agitations of the subject resulted in much good by increasing the care and encouraging more diligence in regard to having the roots well treated and filled, but the present advocating of a less thorough practice is sure to be the cause of trouble in after years.

In regard to the practice discussed here—that of immediate root filling without numerous treatments beforehand where the pulp has been dead any considerable length of time—less harm will come from it since the trouble will be immediate, and those practicing this method will be kept in check by the patients returning with their complaints or going elsewhere for relief. We take the position that it is far better to treat every tooth more times than is necessary, than to fill even one before it is safe to do so. The same is true with regard to removing the pulp; it is better to spend the extra time necessary for its removal and the placing of something in the root to fill the space and exclude the moisture,even though a large per cent of teeth with roots not filled may never give any trouble.

The object of this article is to give a word of warning rather than to go into the details of root filling, or the theories of what takes place through different methods of practice.

TO OUR READERS.

In making the digests of articles, etc., we are not responsible for the views expressed or the claims made by the authors of the original articles. No comments will be given in making the digests, but we shall endeavor to give simply the salient points of the various papers. However, any of our readers who do not

agree with the opinions expressed by the writers of these papers, are invited to reply to them, and also to send us any original articles, items of practice, etc., which they think will be of general interest to the profession.

Book Reviews.

A Compend of Dental Prosthesis and Metallurgy. By George W. Warren, D. D. S. Fully illustrated. P. Blakiston, Son & Co., Philadelphia, 1894.

The author needs no introduction, as he is well known through his other works. The book can hardly be called a compend, but is rather a condensed list or table of mechanical operations for easy reference. It is a little too full in one or two chapters, such as that on "temperament," but evidence of painstaking effort is shown throughout the book, and the section on metallurgy is especially good. It is a book which should be in every dental library.

Dental Medicine. A Manual of Dental Materia Medica and Therapeutics. By Ferdinand J. S. Gorgas, A. M., M. D., D. D. S., Professor of the Principles of Dental Science, Dental Surgery, etc., in the University of Maryland, Baltimore, Md. Fifth edition, revised and enlarged; pp. 580. Price, cloth, $4.00. Philadelphia, P. Blakiston, Son & Co., 1895.

This standard work is very well known as a text-book, and requires but little comment. This, the fifth edition, has been carefully revised and enlarged, and there are but few places which could be criticised.

Among the new medicaments which have been added to this edition, are: Sodium peroxide, pental, europhen, aseptol, glycozone, coryl, ethyl chloride, tropacocain, kalium, natrium, trikresol, loretin, phenosalyl, formalin, diaphtherin, boracin, dermatol, vaselone, camphoid, gaultheria, catechu, carbolate of camphor, cocain phenate, sulfophenol, mono-chlor-ethene, tri-methyl-ethylene, diiodoform, carbolized cosmoline, eugenol, acetanilide, electrozone, etc.

There are many additions to the text, and many new receipts have been added. It is a book which every student should have for study, and every practitioner for reference.

Notices.

NOTICE.

The undersigned, when the DENTAL DIGEST was projected, expected to act as editor, but the work of digesting journals is not to his taste; consequently he retired to reassume the editorial charge of the DENTAL REVIEW with which he was so long connected. In closing this brief connection he tenders his thanks to the first contributors and wishes abundant success to the DIGEST.

A. W. HARLAN.

TRI-STATE MEETING.

The joint meeting of the Dental Societies of Ohio, Michigan, and Indiana will occur June 18, 19, 20, 1895, at Detroit, Michigan. The dental department of the Detroit College of Medicine and Surgery has been secured for the sessions. Michigan has generously invited her sister states to share her hospitality and be her guests on this occasion. The program contemplates four literary sessions, two half-days of clinics, and one half-day of "hurrah." This latter will come in the form of an excursion, thirty-two miles up the Detroit River to the St. Clair Flats, where we will dine at one of the club houses built on piles in the middle of Lake St. Clair. Special hotel and railroad rates are assured, and will be announced later. The railroad fare will be at least as low as one and one-third fares. All reputable dentists in the three states are cordially invited to attend. EXECUTIVE COMMITTEE.

ILLINOIS STATE DENTAL SOCIETY.

The thirty-first annual meeting of the Illinois State Dental Society will be held at Galesburg, May 14 to 17, inclusive. An interesting programme is in course of preparation. All dentists practicing in Illinois are specially invited to attend. A cordial invitation is extended to the profession in general. This will be the first meeting in Galesburg since 1876, and it is the hope of the officers that it will be one of the most profitable meetings in the history of the society. LOUIS OTTOFY, *Secretary*, Masonic Temple, Chicago.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

President, Dr. Geo. A. McMillen, Alton; Secretary, Dr. L. L. Davis, Chicago, 524 W. Van Buren St. Members: Geo. A. Christmann, D. D. S., Chicago; Lester Irons, D. D. S., Mt. Vernon; A. W. Harlan, M. D., D. D. S., 1000 Masonic Temple, Chicago.

Obituary.

DR. H. H. TOWNSEND.

Harrison H. Townsend was born in Concord, Erie county, N. Y., November 16, 1840, and died at Pontiac, Ill., February 9, 1895. He was the youngest of six children and is survived by all the others. On the death of his father, when Harrison was 12 years old, he went to Buffalo and lived for some years with an uncle, working in a store. He studied dentistry under a preceptor in Springville, Erie county, N. Y., and there he began practice; but in March, 1866, he removed to Pontiac, Ill., where he remained nearly 29 years, till his death.

October 23, 1867, he married Mary E. Gaylord, of Springville, N. Y., who with one daughter survives him. In May, 1871, he joined the Illinois State Dental Society and remained a faithful member until the end of his life. He was Librarian, 1882-3; Vice-president, 1884-5; President, 1885-6. In March, 1890, he graduated from the Chicago Homeopathic College, and later became a member of the State Homeopathic Society.

As a dental operator there was probably not in the United States a man more painstaking and conscientious than Dr. Townsend. His only ambition apparently, was to make every piece of work to which he applied his hand just as perfect as possible. By the conscientious performance of every duty laid upon him, and withal by the possession of a most kindly, gentle disposition and manner, he attained the possession of a very extensive practice. His book of engagements was often filled for many months ahead, and those who had once been in his hands seldom went elsewhere for dental services. They would come to him from the cities to which they had removed, and often even from other states.

An indication of the spirit which always governed him professionally the reader may find in the transactions of the Illinois State Dental Society for 1874, the first paper he ever read, entitled, "*Thoroughness and Honesty in Dental Operations.*"

The cause of his death the writer believes was overwork. He could not say "No" to the demands upon him, seldom took a vacation, and was a worn out man at the age of fifty-four.

His was a personality so unusual, and withal so lovable, we shall not soon look upon his like again. G. N.

Death from Cocain.—A death from cocain has just occurred in a dentist's chair in Goshen, Indiana. The patient was a man fifty years of age, and was to have two teeth extracted. Ten minims of (nearly) an eleven per cent solution were injected into the gums, and the patient died in a few minutes after the teeth were extracted. The toxic dose of cocain in this case was, therefore about one twelfth of a grain.—*Railw. Surgeon.*

News Summary.

Cocaine and Bromide of Sodium are incompatible, and serious consequences might arise in case they were administered together.—*Courier of Med.*

Dr. A. C. Hewitt recently exhibited some copper amalgam fillings in the sulci of superior molars that were perfect in color and showed no evidence of shrinking.

There were about 100 visitors to the clinics of the First District Dental Society, January 8. The meeting in the evening was largely attended, perhaps as many as 200 being present.

"The diagnosis of facial abscess had been made by one of those fortunate men who bear both the title of M. D. and D. D. S., and knowing neither profession, practice both."—*E. S. Hodgskin, M. D.*

Dr. Ulysses G. Poyer, of Chicago, died during the month of December, in Chicago. Dr. Poyer was a man of great promise and was much esteemed. He leaves a young widow, having been married only a few months.

The Tri-City Dental Society meets monthly in Moline, Rock Island or Davenport. These meetings are largely attended. Drs. H. G. Pape, Charles R. Botter and A. O. Hunt have read interesting papers recently before this society.

Dr. Broduax, in *La Semaine Medicale*, gives the following remedy for toothache:

Chloral Camphor Carbolic acid Glycerine	aa 5	o drachm j 1-4

Introduce a ball of cotton moistened with this mixture into the cavity.

Why allow your patients to have pyorrhoea, when, according to J. Foster Flagg, in the *Am. Dent. Journal:* "Any dentist who allows his original patient who follows orders to have pyorrhoea should be sued for damages. See that no food presses on the gum border; see that no tooth is unduly pressed and contorted by false articulation, caused by improper width and contouring; allow no biting of threads, cracking of nuts, biting of ice upon one tooth only; or, when a tooth, or teeth, has been lost, see that the articulation is restored and my word for it, gout or no gout, syphilis or disease, pyorrhoea will not come, except filth and malaise of one or more teeth."

Invoking the Law for a Tooth.—A curious suit was recently tried in a European court of justice, in which the plaintiff sought to recover from his dentist a tooth which the latter had extracted. The dentist, guided by precedent, maintained that the tooth clearly belonged to him, simply because it belonged to no one after it was extracted. It seems to us that a nice point of law would have been to decide to whom the pain belonged when it was removed by the dentist in conjunction with the tooth. Some people are never satisfied, but most people, when they lose a toothache, describe it as a painful parting which is really enjoyable.